حمل الآن

مجانا وحصريا

امتحانات رقم (1)

الترم الثانى





30 Marks

Model (1)

A Choose the correct answer:

9

1. The number of solutions of the first degree equation in two variables is .... solution(s). (0 , 1 , 2 , infinite)

2. If $\sqrt{36} = m\sqrt{4}$, then m = ... (3 , 4 , 12 , 9)

3. If A , B are two mutually exclusive events from the sample space of a random experiment ,
   P (A ∩ B) = ... (0 , 1 , $\frac{1}{2}$, $\frac{1}{4}$)

4. The point of intersection of the two straight lines : x - 2 = 0 and y = -1 is ....
   [(2 , -1) , (-2 , -1) , (2 , 1) , (-1 , 2)]

5. A regular dice is rolled once, then the probability of getting an odd number and an even number together equals .... ($\frac{1}{2}$, 1 , 0 , $\frac{1}{4}$)

6. $\mathbb{R}_+ \cup \mathbb{R}_- =$ .... ($\mathbb{R}$, $\varnothing$, [0 , ∞[, $\mathbb{R}^*$)

7. If n $(x) = \frac{5x}{x-4}$, then the domain of n^{-1} is ....
   ({0 ,4 } , $\mathbb{R}$ – {0} , $\mathbb{R}$ –{4} , $\mathbb{R}$ – {0 , 4})

8. $2^x = 4$, then 8^{-x} = ... (64 , 16 , $\frac{1}{64}$, $\frac{1}{16}$)

9. If the expression: $x^2 + 4x + k$ is a perfect square, then k = ... (2 , 4 , 8 , 16)

B Answer each of the following:

21

1. Find the solution set of the equation $x^2 - 5x + 2 = 0$ in $\mathbb{R}$ by using the general formula, rounding the result to two decimals.

....

....

2. Find the solution set of the two equations in $\mathbb{R} \times \mathbb{R}$:
   y = x + 4 , x + y = 4

....

....

3 Find n (x) in the simplest form, showing the domain of n where:

$$n(x) = \frac{x^2 + 2x}{x^2 - 4} + \frac{x - 3}{x^2 - 5x + 6}$$

....

....

4 If $n_1(x) = \frac{2x}{2x + 8}$, $n_2(x) \frac{x^2 + 4x}{x^2 + 8x + 16}$, prove that $n_1 = n_2$

....

....

5 If A , B are two events of the sample space of a random experiment and P(A) = 0.2 , P (B) = P (B´) , P (A ∩ B) = 0.1

Find: a. P (A ∪ B) b. P (A – B)

....

....

6 Find algebraically in $\mathbb{R} \times \mathbb{R}$ the solution set of the two equations:

$x = 2y$, $x^2 + y^2 = 5$

....

....

7 If {–2 , 2} is the set of zeroes of $f : f(x) = x^2 + a$, find the value of a.

....

....

30 Marks

Model (2)

A Choose the correct answer:

9

1. The solution set of the inequality: $-1 < x < 4$ in $\mathbb{R}$ is ………..

($[-1 , 4]$, $]-1 , 4]$, $\{-1 , 4\}$, $]-1 , 4[$)

2. If $X \subset Y$, then $P(X \cap Y) =$ ……… . (0 , $\varnothing$, $P(X)$, $P(Y)$)

3. The set of zeroes of f where $f(x) = -3x$ is ……… . ($\{0\}$, $\{1\}$, R , $\{-3\}$)

4. If $3^{x+1} = 27$, then $x =$ ……… . (1 , 2 , 3 , 4)

5. The number of solutions of the two equations: $x + y = 1$, $5y + 5x = 3$ in $\mathbb{R} \times \mathbb{R}$ is ……..

(infinite , 0 , 1 , 2)

6. If $\frac{x+2}{x-4}$ is a rational number, then $x \neq$ ……… . (-2 , 2 , -4 , 4)

7. If A and B are two events of the sample space of a random experiment, $B \subset A$, then $P(A \cup B) =$ ……… . (A , B , P(A) , P(B))

8. If $x^2 - y^2 = 35$, $x - y = 5$, then $x + y =$ ……… . (35 , 5 , 7 , 40)

9. The solution set of the two equations: $x + 4 = 0$, $y = 2$ in $\mathbb{R} \times \mathbb{R}$ is ……… .

($\{-4 , 2\}$, $\{(-4 , 2)\}$, $\mathbb{R}$, $\varnothing$)

B Answer each of the following:

21

1. Find the solution set of the two equations in $\mathbb{R} \times \mathbb{R}$: $x = y + 8$, $x + y = 2$.

....

....

2. Find n (y) in the simplest form, showing the domain of n where:

$$n(y) = \frac{y^2 - 9}{3y^2 + 9y} \div \frac{y^3 + y}{y^2 + 1}$$

....

....

3. If $n_1(x) = \frac{5x}{5x + 10}$, $n_2(x) = \frac{x^2 + 2x}{x^2 + 4x + 4}$, prove that $n_1 = n_2$

....

....

4 Find the value of each of a , b , given that (3 , −1) is a solution for the two equations: $ax + by = 5$, $3ax + by = 17$

....

....

5 If A , B are two events of the sample space of a random experiment and $P(A) = \frac{1}{4}$, $P(B) = \frac{3}{8}$, $P(A \cap B) = \frac{1}{8}$, find $P(A \cup B)$.

....

....

6 Solve the following equation in $\mathbb{R}$ using the general rule, rounding the result to one decimal:

$$x^2 - x = 4$$

....

....

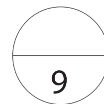
7 If $f : f(x) = \frac{x^2 + k}{x^2 - mx + 6}$, its domain is $\mathbb{R} - \{2, 3\}$, $f(4) = 9$, find the value of $m \times k$.

....

....

30 Marks

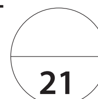
Model (3)



A Choose the correct answer:

1. If $x^2 + 12x + 32 = (x + L)(x + M)$, then L + M = ... (12 , 32 , 8 , 4)
2. The number of solutions of the two equations: $x + 2y = 3$, $2x + 4y - 6 = 0$ in $\mathbb{R} \times \mathbb{R}$ is .... (1 , 2 , 0 , infinite)
3. If $B \subset S$, $P(B) = P(B')$, then P(B) = ... (0 , 1 , $\frac{1}{4}$, $\frac{1}{2}$)
4. If $\sqrt[3]{64} = \sqrt{x}$, then x = ... (8 , 16 , 4 , 32)
5. If $6^{n-2} = \frac{1}{216}$,then n = ... (1 , −1 , 6 , −6)
6. The common domain of the two fractions $\frac{3x}{x-5}$ and $\frac{x}{x+2}$ is .... ({5, -2} , $\mathbb{R}$−{5 , -2} , $\mathbb{R}$, (-2 ,5))
7. If z(f) = {-2} , $f(x) = x^3 - m$, then m = ... (8 , -8 , 2 , -2)
8. If $a^2 - b^2 = 48$, $a + b = 6$, then $a - b$ = ... (54 , 6 , 8 , 48)
9. If A , B are two mutually exclusive events from the sample space of a random experiment, then $P(A \cap B)$ = ... (0 , 1 , $\frac{1}{4}$, $\frac{1}{2}$)

B Answer each of the following:



1. Find the solution set of the equation: $x^2 - 4x + 2 = 0$ in $\mathbb{R}$ using the general formula.

....

....

2. Two positive real numbers, the difference between them is 1 and the sum of their squares is 25, find the two numbers.

....

....

3. Find n(x) in the simplest form, showing the domain:

$$n(x) = \frac{2x^2 - x - 6}{x^2 - 3x} \div \frac{4x^2 - 9}{2x^2 - 3x}$$

....

....

4 If A, B are two events of the sample space of a random experiment,

$P(A) = \frac{1}{3}$, and $P(A \cup B) = \frac{7}{12}$

, find the value of P(B) if :

a. A and B are mutually exclusive events **b.** $A \subset B$

....

....

5 If $n_1(x) = \frac{x^2}{x^3 - x^2}$, $n_2(x) = \frac{x^3 + x^2 + x}{x^4 - x}$, prove that $n_1 = n_2$

....

....

6 Find in $\mathbb{R} \times \mathbb{R}$, the S.S. of the following equations:

$2x - y = 3$, $x + 2y = 4$

....

....

7 If $n(x) = \frac{x^2 - 2x}{x - 2}$

- Find **a.** $n^{-1}(x)$ in the simplest form, showing the domain.

b. If $n^{-1}(x) = \frac{1}{3}$, find the value of x.

....

....

30 Marks

Model (1)

9

A Choose the correct answer:

1 The number of solutions of the first degree equation in two variables is .... solution(s).

(0 , 1 , 2 , infinite)

2 If $\sqrt{36} = m\sqrt{4}$, then m = ... (3 , 4 , 12 , 9)

3 If A , B are two mutually exclusive events from the sample space of a random experiment ,

P (A ∩ B) = ... (0 , 1 , $\frac{1}{2}$, $\frac{1}{4}$)

4 The point of intersection of the two straight lines : x - 2 = 0 and y = -1 is ....

[(2 , -1) , (-2 , -1) , (2 , 1) , (-1 , 2)]

5 A regular dice is rolled once, then the probability of getting an odd number and an even number together equals .... ($\frac{1}{2}$, 1 , 0 , $\frac{1}{4}$)

6 $\mathbb{R}_+ \cup \mathbb{R}_-$ = ... ($\mathbb{R}$, ∅ , [0 , ∞[, $\mathbb{R}^*$)

7 If n (x) = $\frac{5x}{x-4}$, then the domain of n^{-1} is ....

({0 ,4 } , $\mathbb{R}$ – {0} , $\mathbb{R}$ –{4} , $\mathbb{R}$ – {0 , 4})

8 2^x = 4 , then 8^{-x} = ... (64 , 16 , $\frac{1}{64}$, $\frac{1}{16}$)

9 If the expression: $x^2 + 4x + k$ is a perfect square, then k = ... (2 , 4 , 8 , 16)

21

B Answer each of the following:

1 Find the solution set of the equation $x^2 - 5x + 2 = 0$ in $\mathbb{R}$ by using the general formula, rounding the result to two decimals.

Answer

∵ a = 1 , b = –5 , c = 2

$\therefore x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ $\therefore x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \times 1 \times 2}}{2 \times 1}$, $\therefore x = \frac{5 \pm \sqrt{17}}{2}$

$\therefore x \simeq 4.56$ or $x \simeq 0.44$

∴ The S.S.= {4.56 , 0.44 }

2 Find the solution set of the two equations in $\mathbb{R} \times \mathbb{R}$:

$y = x + 4 \quad , x + y = 4$

Answer

$y = x + 4$ .... (1) $\qquad , x + y = 4$ .... (2)

By substituting from (1) in (2):

$\therefore x + (x + 4) = 4 \qquad \therefore 2x + 4 = 4 \qquad \therefore x = 0$

Substituting in (1): $y = x + 4 \qquad \therefore y = 0 + 4 \qquad \therefore y = 4$

$\therefore$ The S.S.= $\{(0 , 4)\}$

3 Find n (x) in the simplest form, showing the domain of n where:

$$n(x) = \frac{x^2 + 2x}{x^2 - 4} + \frac{x - 3}{x^2 - 5x + 6}$$

Answer

$$\therefore n(x) = \frac{x(x+2)}{(x - 2)(x + 2)} + \frac{x - 3}{(x - 2)(x - 3)}$$

$\therefore$ The domain $= \mathbb{R} - \{2 , -2 , 3\}$

$$\therefore n(x) = \frac{x(x+2)}{(x - 2)(x + 2)} + \frac{x - 3}{(x - 2)(x - 3)}$$

$$\therefore n(x) = \frac{x}{(x - 2)} + \frac{1}{(x - 2)}$$

$$\therefore n(x) = \frac{x + 1}{(x - 2)}$$

4 If $n_1(x) = \frac{2x}{2x + 8}$, $n_2(x) \frac{x^2 + 4x}{x^2 + 8x + 16}$, prove that $n_1 = n_2$

Answer

$\because n_1(x) = \frac{2x}{2x + 8} \qquad \therefore n_1(x) = \frac{x}{(x + 4)}$

$\therefore$ The domain $= \mathbb{R} - \{-4\}$

$\because n_2(x) = \frac{x^2 + 4x}{x^2 + 8x + 16} \qquad \therefore n_2(x) = \frac{x(x+4)}{(x + 4)(x + 4)}$,

$\therefore$ The domain $= \mathbb{R} - \{-4\}$

$\therefore n_1(x) = \frac{x}{x + 4} \quad , \quad n_2(x) = \frac{x}{x + 4}$

$\therefore n_1 = n_2$

5 If A , B are two events of the sample space of a random experiment and P(A) = 0.2 , P (B) = P (B´) , P (A ∩ B) = 0.1

Find: a. P (A ∪ B)　　　b. P (A – B)

Answer

a. ∵ P (B) = P(B´)　　, P (B) + P (B´) =1　　∴ P (B) = 0.5

∵ P (A ∪ B) = P(A) + P(B) – P(A ∩ B).

∴ P (A ∪ B) = 0.2 + 0.5 – 0.1 = 0.6

b. ∵ P (A – B) = P(A) – P(A ∩ B).　　∴ P (A – B) = 0.2 – 0.1 = 0.1

6 Find algebraically in $\mathbb{R} \times \mathbb{R}$ the solution set of the two equations:

$x = 2y$, $x^2 + y^2 = 5$

Answer

$x = 2y$ ……..(1) , $x^2 + y^2 = 5$ …….(2)

By substituting from (1) in (2):

∴ $(2y)^2 + y^2 = 5$　　∴ $4y^2 + y^2 = 5$　　∴ $5y^2 = 5$

∴ $y = 1$ or $y = -1$

Substituting in (1)

∴ $x = 2$　or　$x = -2$

∴ The S.S.= {(–2 , –1) , (2 ,1)}

7 If {–2 , 2} is the set of zeroes of f : $f(x) = x^2 + a$, find the value of a.

Answer

∵{-2 , 2} is the set of zeroes of the function

∴ $f(2) = 0$　　∴ $2^2 + a = 0$　　∴ a= –4

30 Marks

Model (2)

9

A Choose the correct answer:

1 The solution set of the inequality: $-1 < x < 4$ in $\mathbb{R}$ is ……… .

($[-1, 4]$, $]-1, 4]$, $\{-1, 4\}$, $]-1, 4[$)

2 If $X \subset Y$, then $P(X \cap Y) =$ ……… . (0 , $\varnothing$, P(X) , P(Y))

3 The set of zeroes of f where $f(x) = -3x$ is ……… . ($\{0\}$, $\{1\}$, R , $\{-3\}$)

4 If $3^{x+1} = 27$, then $x =$ ………. . (1 , 2 , 3 , 4)

5 The number of solutions of the two equations: $x + y = 1$, $5y + 5x = 3$ in $\mathbb{R} \times \mathbb{R}$ is …….. .

(infinite , 0 , 1 , 2)

6 If $\frac{x+2}{x-4}$ is a rational number, then $x \neq$ ………. . (-2 , 2 , -4 , 4)

7 If A and B are two events of the sample space of a random experiment, $B \subset A$, then $P(A \cup B) =$ ……. .

(A , B , P(A) , P(B))

8 If $x^2 - y^2 = 35$, $x - y = 5$, then $x + y =$ ……… . (35 , 5 , 7 , 40)

9 The solution set of the two equations: $x + 4 = 0$, $y = 2$ in $\mathbb{R} \times \mathbb{R}$ is …….

($\{-4, 2\}$, $\{(-4, 2)\}$, $\mathbb{R}$, $\varnothing$)

B Answer each of the following:

21

1 Find the solution set of the two equations in $\mathbb{R} \times \mathbb{R}$: $x = y + 8$, $x + y = 2$.

Answer

$x = y + 8$ …….(1) , $x + y = 2$ ……. (2)

By substituting from (1) in (2):

$\therefore (y + 8) + y = 2$ $\therefore 2y + 8 = 2$ $\therefore 2y = -6$

$\therefore y = -3$

Substituting in (2): $\because x + y = 2$ $\therefore x + (-3) = 2$ $\therefore x = 5$

$\therefore$ The S.S. $= \{(5, -3)\}$

2 Find n (y) in the simplest form, showing the domain of n where:

$$n(y) = \frac{y^2 - 9}{3y^2 + 9y} \div \frac{y^3 + y}{y^2 + 1}$$

Answer

$$n(y) = \frac{y^2 - 9}{3y^2 + 9y} \div \frac{y^3 + y}{y^2 + 1}$$

$$n(y) = \frac{(y+3)(y-3)}{3y(y+3)} \div \frac{y(y^2+1)}{y^2+1}$$

$\therefore$ The domain $= \mathbb{R} - \{0, -3\}$

$$\therefore n(y) = \frac{y-3}{3y} \div \frac{y}{1}$$

$$\therefore n(y) = \frac{y-3}{3y} \times \frac{1}{y} \qquad \therefore n(y) = \frac{y-3}{3y^2}$$

3 If $n_1(x) = \dfrac{5x}{5x+10}$, $n_2(x) = \dfrac{x^2+2x}{x^2+4x+4}$, prove that $n_1 = n_2$

Answer

$$\because n_1(x) = \frac{5x}{5x+10} \qquad \therefore n_1(x) = \frac{5x}{5(x+2)}$$

$\therefore$ The domain $= \mathbb{R} - \{-2\}$

$$\because n_2(x) = \frac{x^2+2x}{x^2+4x+4} \qquad \therefore n_2(x) = \frac{x(x+2)}{(x+2)(x+2)}$$

$\therefore$ The domain $= \mathbb{R} - \{-2\}$

$$\therefore n_1(x) = \frac{x}{x+2} \quad , \quad n_2(x) = \frac{x}{x+2}$$

$\therefore n_1 = n_2$

4 Find the value of each of a , b , given that (3 , –1) is a solution for the two equations:

$ax + by = 5$, $3a\,x + by = 17$

Answer

$\because$ (3 , -1) is a solution for the two equations

$\therefore 3a - b = 5$ ….. (1) , $9a - b = 17$ ……. (2)

By subtracting (1) from (2): $\therefore 6a = 12$ $\therefore a = 2$

Substituting in (1): $\therefore b = 1$

5 If A , B are two events of the sample space of a random experiment and $P(A) = \frac{1}{4}$, $P(B) = \frac{3}{8}$, $P(A \cap B) = \frac{1}{8}$, find $P(A \cup B)$.

Answer

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$= \frac{1}{4} + \frac{3}{8} - \frac{1}{8}$$

$$= \frac{1}{2}$$

6 Solve the following equation in $\mathbb{R}$ using the general rule, rounding the result to one decimal:

$$x^2 - x = 4$$

Answer

$\because x^2 - x - 4 = 0$ $\quad \therefore$ a = 1 , b = -1 , c = -4

$x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ $\quad \therefore x = \dfrac{-(-1) \pm \sqrt{(-1)^2 - 4 \times 1 \times -4}}{2 \times 1}$, $\therefore x = \dfrac{1 \pm \sqrt{17}}{2}$

$\therefore x \simeq 2.6$ or $x \simeq -1.6$

$\therefore$ The S.S. = {2.6 , -1.6 }

7 If $f : f(x) = \dfrac{x^2 + k}{x^2 - mx + 6}$, its domain is $\mathbb{R} - \{2, 3\}$, $f(4) = 9$, find the value of m × k.

Answer

$\therefore$ The domain is $\mathbb{R} - \{2, 3\}$

$\therefore$ At $x = 2$ $\quad \therefore x^2 - mx + 6 = 0$ $\quad \therefore (2)^2 - 2m + 6 = 0$

$\therefore 2m = 10$ $\quad \therefore m = 5$

$\therefore f(4) = 9$ $\quad \therefore 9 = \dfrac{(4)^2 + k}{(4)^2 - 4 \times 5 + 6}$ $\quad \therefore 9 = \dfrac{16 + k}{2}$

$\therefore 18 = 16 + k$ $\quad \therefore k = 2$ $\quad \therefore m \times k = 2 \times 5 = 10$

30 Marks

Model (3)

A Choose the correct answer:

9

1. If $x^2 + 12x + 32 = (x + L)(x + M)$, then $L + M = \dots\dots\dots$. (12 , 32 , 8 , 4)
2. The number of solutions of the two equations: $x + 2y = 3$, $2x + 4y - 6 = 0$ in $\mathbb{R} \times \mathbb{R}$ is …….. (1 , 2 , 0 , infinite)
3. If $B \subset S$, $P(B) = P(B')$, then $P(B) = \dots\dots\dots$. $(0 , 1 , \frac{1}{4} , \frac{1}{2})$
4. If $\sqrt[3]{64} = \sqrt{x}$, then $x = \dots\dots\dots$. (8 , 16 , 4 , 32)
5. If $6^{n-2} = \frac{1}{216}$,then $n = \dots\dots\dots$. (1 , –1 , 6 , –6)
6. The common domain of the two fractions $\frac{3x}{x-5}$ and $\frac{x}{x+2}$ is …….. . ({5, -2} , $\mathbb{R}$–{5 , -2} , $\mathbb{R}$, (-2 ,5))
7. If $z(f) = \{-2\}$, $f(x) = x^3 - m$, then $m = \dots\dots\dots$. (8 , -8 , 2 , -2)
8. If $a^2 - b^2 = 48$, $a + b = 6$, then $a - b = \dots\dots\dots$. (54 , 6 , 8 , 48)
9. If A , B are two mutually exclusive events from the sample space of a random experiment, then $P(A \cap B) = \dots\dots\dots$. $(0 , 1 , \frac{1}{4} , \frac{1}{2})$

B Answer each of the following:

21

1. Find the solution set of the equation: $x^2 - 4x + 2 = 0$ in $\mathbb{R}$ using the general formula.

Answer

$a = 1$, $b = -4$, $c = 2$

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$, $\therefore x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4 \times 1 \times 2}}{2 \times 1}$, $\therefore x = \frac{4 \pm 2\sqrt{2}}{2}$

$\therefore x = 2 \pm \sqrt{2}$

$\therefore x \simeq 2 + \sqrt{2}$ or $x \simeq 2 - \sqrt{2}$

$\therefore$ The S.S. = $\{2 + \sqrt{2} , 2 - \sqrt{2}\}$

2 Two positive real numbers, the difference between them is 1 and the sum of their squares is 25, find the two numbers.

Answer

Let the numbers be x and y.

$x - y = 1$ ……… (1) $x^2 + y^2 = 25$ ……… (2)

$x = y + 1$ ……….(3)

By substituting from (3) in (2):

$(y + 1)^2 + y^2 = 25$

$y^2 + 2y + 1 + y^2 - 25 = 0$

$2y^2 + 2y - 24 = 0$

$2(y^2 + y - 12) = 0$

$(y + 4)(y - 3) = 0$

$y = -4$ (refused) or $y = 3$

by substituting in (3)

$x = 3 + 1$ $\therefore x = 4$, then the two numbers are 3 and 4.

3 Find n(x) in the simplest form, showing the domain:

$$n(x) = \frac{2x^2 - x - 6}{x^2 - 3x} \div \frac{4x^2 - 9}{2x^2 - 3x}$$

Answer

$$\because n(x) = \frac{(2x + 3)(x - 2)}{x(x - 3)} \div \frac{(2x + 3)(2x - 3)}{x(2x - 3)}$$

$$\therefore n(x) = \frac{(2x + 3)(x - 2)}{x(x - 3)} \times \frac{x(2x - 3)}{(2x + 3)(2x - 3)}$$

$$\therefore \text{The domain} = \mathbb{R} - \{0, 3, \frac{3}{2}, -\frac{3}{2}\}$$

$$\therefore n(x) = \frac{(2x + 3)(x - 2)}{x(x - 3)} \times \frac{x(2x - 3)}{(2x + 3)(2x - 3)}$$

$$\therefore n(x) = \frac{x - 2}{x - 3}$$

4 If A, B are two events of the sample space of a random experiment,

$P(A) = \frac{1}{3}$, and $P(A \cup B) = \frac{7}{12}$

, find the value of P(B) if :

a. A and B are mutually exclusive events **b**. $A \subset B$

Answer

a. If A and B are mutually exclusive events, then $P(A \cap B) = 0$

$P(A \cup B) = P(A) + P(B)$

$\frac{7}{12} = \frac{1}{3} + P(B)$ $\therefore P(B) = \frac{7}{12} - \frac{1}{3} = \frac{1}{4}$,

b. If $A \subset B$, then $P(B) = P(A \cup B)$

$\therefore P(B) = \frac{7}{12}$

5 If $n_1(x) = \dfrac{x^2}{x^3 - x^2}$, $n_2(x) = \dfrac{x^3 + x^2 + x}{x^4 - x}$, prove that $n_1 = n_2$

Answer

$\because n_1(x) = \dfrac{x^2}{x^2(x-1)}$

$\therefore$ The domain $= \mathbb{R} - \{0, 1\}$

$\therefore n_1(x) = \dfrac{1}{(x-1)}$

$\because n_2(x) = \dfrac{x(x^2 + x + 1)}{x(x-1)(x^2 + x + 1)}$

$\therefore$ The domain $= \mathbb{R} - \{0, 1\}$

$\therefore n_2(x) = \dfrac{1}{(x-1)}$

$\therefore n_1(x) = \dfrac{1}{(x-1)}$, $n_2(x) = \dfrac{1}{(x-1)}$

$\therefore n_1 = n_2$

6 Find in $\mathbb{R} \times \mathbb{R}$, the S.S. of the following equations:

$2x - y = 3$, $x + 2y = 4$

Answer

$2x - y = 3$ ….. (1) , $x + 2y = 4$ …. (2)

$x = 4 - 2y$ …. (3)

By Substituting (3) in (1):

$\therefore 2(4 - 2y) - y = 3$ $\therefore 8 - 4y - y = 3$

$\therefore -5y = -5$ $\therefore y = 1$

Substituting in (3)

$\therefore x = 4 - 2(1)$ $\therefore x = 2$

$\therefore$ The S.S. $= \{(2, 1)\}$

7 If $n(x) = \dfrac{x^2 - 2x}{x - 2}$

- Find **a**. $n^{-1}(x)$ in the simplest form, showing the domain.

b. If $n^{-1}(x) = \dfrac{1}{3}$, find the value of x.

Answer

a. If $n(x) = \dfrac{x^2 - 2x}{x - 2}$, then $n^{-1}(x) = \dfrac{x - 2}{x^2 - 2x} = \dfrac{x - 2}{x(x - 2)}$

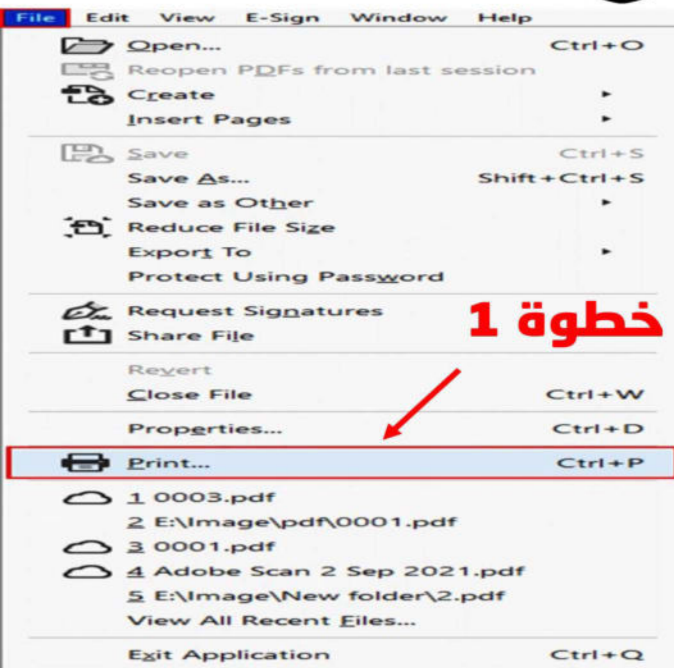
The domain of $n^{-1}(x) = \mathbb{R} - \{0, 2\}$

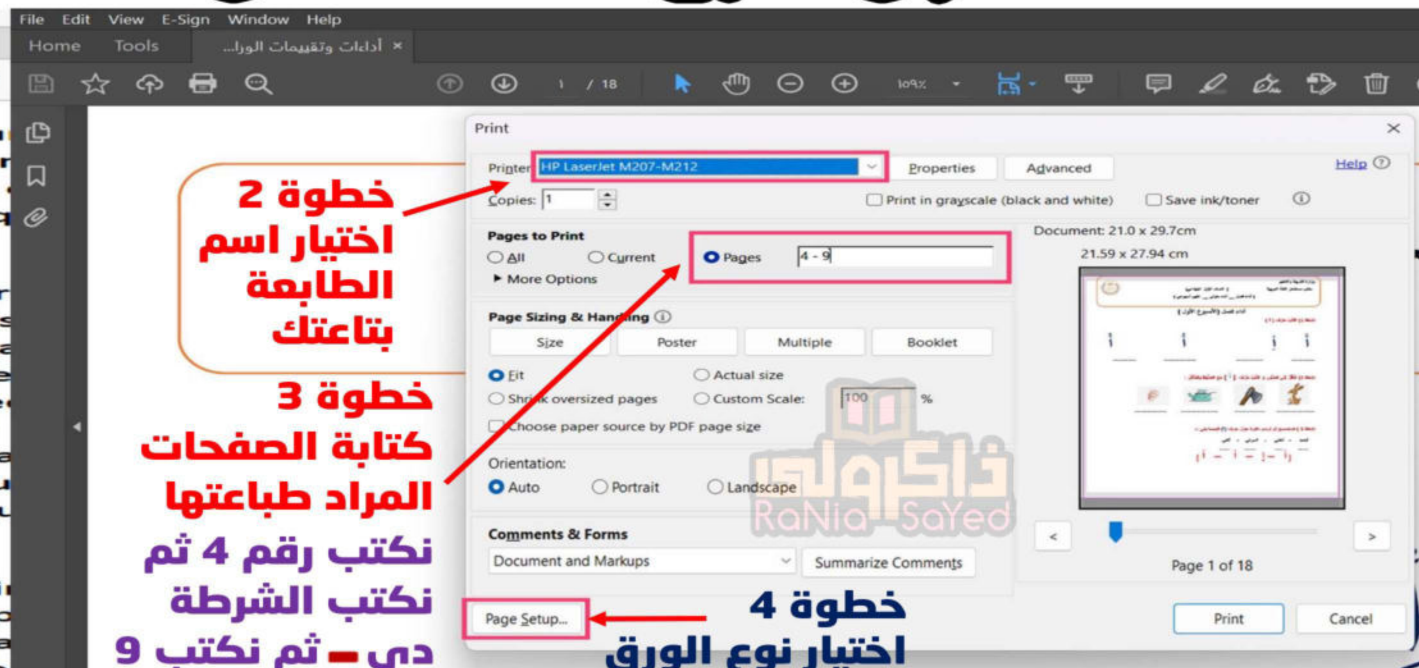
$\therefore n^{-1}(x) = \dfrac{1}{x}$

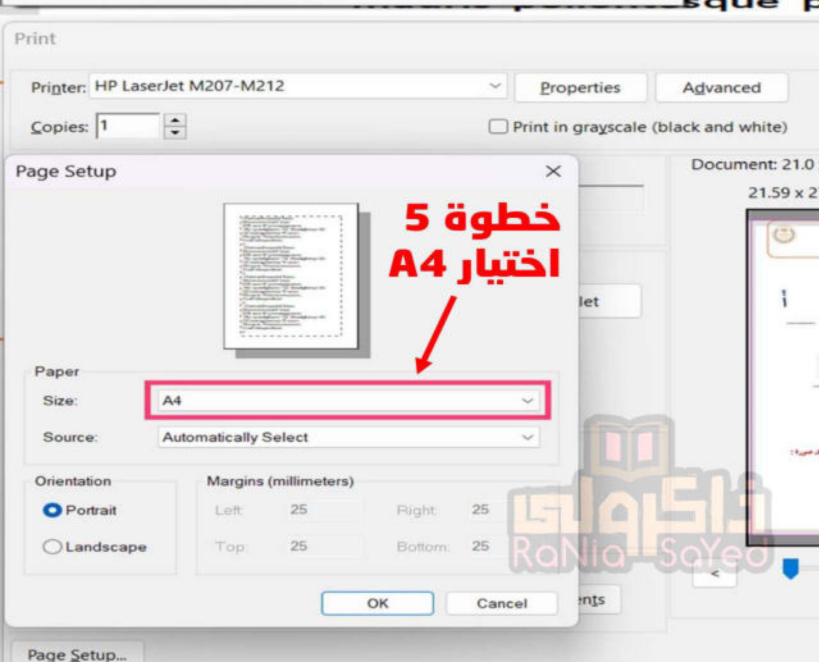
b. If $n^{-1}(x) = \dfrac{1}{3}$

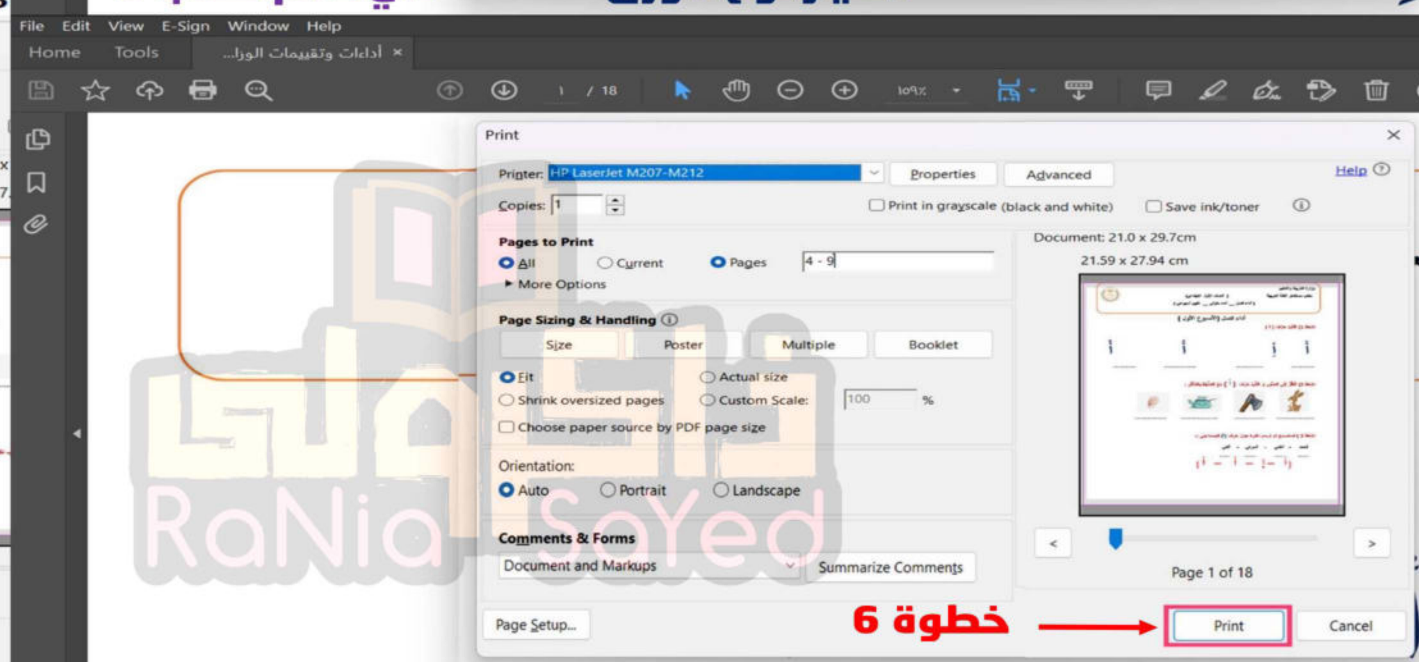
$\dfrac{1}{3} = \dfrac{1}{x}$, then $x = 3$

كيفية طباعة صفحات معينة من ملف معين
مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9









حمل الآن

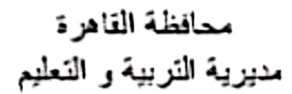
مجانا وحصريا

امتحانات رقم (2)

الترم الثانى






محافظة القاهرة
مديرية التربية و التعليم

نموذج استرشادي لامتحان إتمام الدراسة بمرحلة التعليم الأساسي

الفصل الدراسي الثاني ٢٠٢٤ / ٢٠٢٥ م

المادة : الجبر و الاحتمال بالإنجليزية

التاريخ : .... / .... / ٢٠٢٥ م

زمن الإجابة : ساعتان

عدد أوراق الإجابة (٦) ورقات بخلاف الغلاف ☐
و على الطالب مسئولية المراجعة ☐
و التأكد من ذلك قبل تسليم الكراسة ☐
في نهاية الوقت المخصص للإجابة

نموذج استرشادي

رقم السؤال	الدرجة رقما	الدرجة كتابتا	التوقيع	
			المقدر	المراجع
من ١ إلى ٩				
من ١٠ إلى ١١				
من١٢ إلى ١٣				
من١٤ إلى ١٥				
١٦ + التجميع				
المجموع				

مجموع الدرجات

رقم المراقبة

قطع ✂ -

نموذج استرشادي امتحان إتمام الدراسة بمرحلة التعليم الأساسي

الفصل الدراسي الثاني ٢٠٢٤ / ٢٠٢٥ م

المادة : الجبر و الاحتمال بالإنجليزية

التاريخ : .... / .... / ٢٠٢٥ م

زمن الإجابة : ....

رقم المراقبة

عدد أوراق الإجابة (٦) ورقات بخلاف الغلاف ☐
و على الطالب مسئولية المراجعة ☐
و التأكد من ذلك قبل تسليم الكراسة ☐
في نهاية الوقت المخصص للإجابة

نموذج استرشادي

الإدارة التعليمية : ....

اسم الطالب رباعيا : ....

المدرســــــة : ....

رقم الجلوس : ....

توقيع الملاحظين :

١ - ....

٢ - ....

توقيع الملاحظين بصحة بيانات الطالب ☐
كما وردت رقم جلوس الطالب ☐
و مطابقة عدد أوراق كراسة الإجابة عند ☐
استلامها من الطالب

غير مصرح بالكتابة

في هذه الصفحة

Group (1): Choose the correct answer from those given:

1 $R^+ \cap R^- =$ ....

(a) R (b) R – { zero } (c) Ø (d) { zero }

....

....

2 If A , B are two mutually exclusive events from a sample space of a random experiment, then $P(A \cap B) =$ ....

(a) zero (b) 0.25 (c) 0.5 (d) 1

....

....

3 Two positive numbers, one of them is double the other and their product is 18, then the two numbers are ....

(a) 2 , 4 (b) 3 , 6 (c) 4 , 8 (d) 6 , 12

....

....

4 The number $\frac{x+3}{x-5}$ is a rational number if $x \neq$ ....

(a) – 5 (b) – 3 (c) 3 (d) 5

....

....

5 The number of solutions of the equation of first degree in two variables in R × R is ....

(a) zero (b) 1 (c) 2 (d) an infinite number

....

....

بقية الأسئلة في الصفحات التالية

6 The simplest form of the expression $\frac{x}{x-2} - \frac{2}{x-2}$ equals .... where $x \neq 2$

(a) 2 (b) 1 (c) – 1 (d) – 2

7 The algebraic fraction $\frac{1}{x}$ equals the algebraic fraction .... where $x \neq 0$

(a) $\frac{x}{x^2}$ (b) $\frac{1}{x^2}$ (c) $\frac{x}{2}$ (d) $\frac{x+1}{x}$

8 The quotient of dividing $\frac{2x}{x+7}$ by $\frac{x}{x+7}$ is ....

(a) 1 (b) 2 (c) 3 (d) 4

9 If the algebraic fraction $\frac{x}{x-3}$ has a multiplicative inverse, then its domain is.....

(a) R (b) R – {3} (c) R – {0,3} (d) {0,3}

بقية الأسئلة في الصفحات التالية

Group (2): Answer the following questions showing the steps of solution:

(10) Find n (x) in the simplest form showing its domain where:

$$n(x) = \frac{x^3 - 8}{x^2 - 9} \times \frac{x + 3}{x^2 + 2x + 4}$$

(11) Find in $R \times R$ the solution set of the two equations:

$$2x - 3y = -1 \quad , \quad 5x - y = 4$$

بقية الأسئلة في الصفحات التالية

(12) Find n (x) in the simplest form showing its domain where:

$$n(x) = \frac{x-2}{x^2-4} + \frac{x-3}{x^2-x-6}$$

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(13) Find in R × R the solution set of the two equations:

$x = y \quad , \quad x\,y = 9$

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بقية الأسئلة في الصفحات التالية

(14) If { 2 } is the set of zeros of the function f where $f(x) = x^3 - a$,

find the value of a

(15) By using the general formula find in R the solution set of the equation:

$x^2 - x - 3 = 0$ (to the nearest one decimal place)

بقية الأسئلة في الصفحة التالية

(16) If A , B are two events from a sample space of a random experiment and

$P(A) = 0.3$, $P(B) = 0.6$, $P(A \cup B) = 0.7$

Find: $P(A \cap B)$

....

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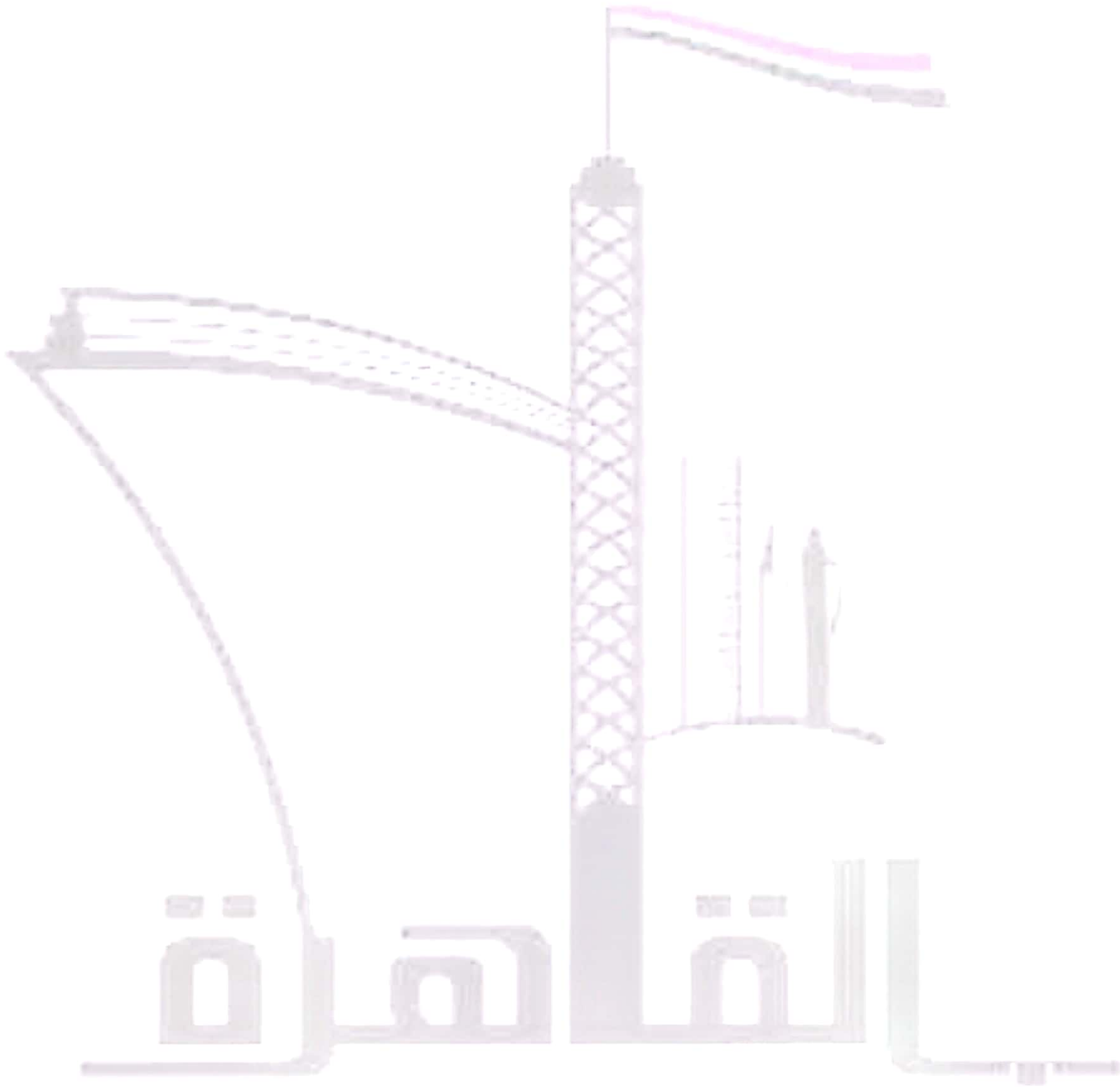
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(انتهت الأسئلة مع خالص الدعاء بالتوفيق)

مسودة


القاهرة
مديرية التربية والتعليم
Directorate Of Education In Cairo

Ministry of Education
Alexandria Governorate
Public education
Maths supervision

Second Term Exam (May)
The completion of the basic education certificate
Academic Year 1446 \ 2025



Guidance Model (Math Subject)		
Algebra and Statistics	Duration : 2 hours	Allow use Calculator

Number of Pages (12) with cover and It is the student's responsibility to review and ensure this before submitting the booklet.

Question	Mark	Mark with letters	Signature
1			
2			
3			
4			
5			
Total			

Mark

Secret Number

Collect: .... Reviser : ....

Secret Number	The completion of the basic education certificate Academic Year 1446 \ 2025 Alexandria Education Directorate - Public education ((Guidance Model))

Student Name : ....

Seat Number : .... School : ....

Signature of observers : 1) 2)

Writing is not allowed in this page

Arab Republic of Egypt Ministry of Education Alexandria Governorate	Second Term Exam (May) The completion of the basic education certificate Academic Year 1446 \ 2025	Subject : Alegebra Duration : 2 hours (Allow use calculator)

First Question: (A) Choose the correct answer from the given answer:

1) If A is an event of samples paces and $P(\grave{A}) - P(A) = 0.4$, *then* $P(A) =$ ………………….

a) 0.3   b) 0.7   c) 0.5   d) 1

2) The solution set of two equation: $x - 5 = 0$, $xy - 15 = 0$ *in* $R \times R$ *is* ………………….

a) $\{(5,3)\}$ b) $(\{-5,-3\})$ c) $(\{-3,5\})$ d) $(\{5,3\})$

3) The domain of the function: $f(x) = \frac{x^2-4}{x^2-2x}$ *is* ………………….

a) $\{2,-2\}$ b) $R - \{-2,2\}$ c) $R - \{0,2\}$ d) $R - \{-2,2,0\}$

(B) Answer the following:

Find algebraically in $R \times R$ solution set the two simultaneous equations: $x + y = 3$, $2x - y = 3$

Solution:

Second Question: (A) Choose the correct answer from the given answer:

1) If $x + y = 7$, $x - y = 2$, $then\ x^2 - y^2 =$ ....
   a) 14 b) 9 c) 51 d) 81

2) The set of zeros of the function $f(x) = \frac{x^2-9}{x-3}$ is ....
   a) $\{3\}$ b) $\{-3\}$ c) $\{-3, 3\}$ d) $R - \{3\}$

3) The solution set of the two equations $y = x$, $x^2 + y^2 = 4$ $in\ R \times R$ is ....
   a) $\{(2,2)\}$ b) $\{(2,2), (-2,-2)\}$ c) $\{(-2,-2)\}$ d) $\{(2,4)\}$

Continue to question (2) : (B) Answer the following :

By using general formula , Find solution set of the equation : $x^2 - 3x - 5 = 0$

in R (taking $\sqrt{29} \cong 5.39$) rounding the result to neatest two decimal.

Solution

Third Question: (A) Choose the correct answer from the given answer:

1) If A , B are two mutually exclusive events of sample spaces , $P(A) = 0.4$, $P(B) = 0.7$ and $P(B - A) = $ ………………….
   a) 0.4 b) 0.7 c) 1 d) 0.3

2) $[1 , 3] -]1 , 3[= $ ……………….
   a) $\{1 , 3\}$ b) $\{1\}$ c) $\{3\}$ d) $]1 , 3]$

3) The multiplicative inverse of the function $f : f(x) = \frac{x^2+3x}{x^2-2x}$ is ……………………..
   a) $\frac{x+3}{x-2}$ b) $\frac{3-x}{x-2}$ c) $\frac{x-2}{x+3}$ d) $\frac{-x-3}{x-2}$

(B) Answer the following :

Find $n(x)$ in its simplest form showing the domain where : $n(x) = \frac{x^2+3x}{x^2-9} + \frac{x-1}{x^2-4x+3}$

Solution

Fourth Question: (A) Answer the following question:

If $n_1(x) = \frac{x}{x-1}$, $n_2(x) = \frac{x^2-x}{x^2-2x+1}$, Prove that $n_1 = n_2$

Solution

(B) Answer the following question

Find $n(x)$ in its simplest form showing the domain $n(x) = \frac{x-2}{x^2-x-2} \div \frac{6}{2x+4}$

Solution

Fifth Question: (A) Answer the following question:

$$\text{If } n(x) = x\frac{2x-4}{x^2-3x+2}$$

Find $n^{-1}(x)$ showing the domain , then find $n^{-1}(3)$ if possible

Solution

(B) Answer the following question

If A , B are two events in the sample spaces an $P(A) = 0.6$, $P(B) = 0.7$,

$P(A \cap B) = 0.5$, *Find*

First : $P(A \cup B)$ Second: The probability of only event A occurring

Solution

((End Questions))

Draft

Al Behira Governorate Damanhour Education Directorate	Expermental Test 2024 / 2025 (Model 1)	Grade : Third prep. Subject : Algebra Time : 2 hours

Group (1): Choose the correct answer from those given:

1 If $a\,b = 3$, $a\,b^2 = 12$, then $b =$ ....

(a) 3 (b) 4 (c) 2 (d) 6

....

....

2 If A and B are two events from the samble space of a random experiment , $A \subset B$, $P(A) = 0.3$, then $P(A \cap B) =$ ....

(a) 0.7 (b) 1 (c) -0.3 (d) 0.3

....

....

3 The set of solution of the two equations : $x = 2$, $y = 3$ in $\mathbb{R} \times \mathbb{R}$ is ....

(a) $\{(2 , 3)\}$ (b) $\{(3 , 2)\}$ (c) $\mathbb{R}$ (d) $\varnothing$

....

....

4 If $f(x) = \frac{x+2}{x-3}$, then the domain of f^{-1} is ....

(a) $\mathbb{R} - \{3\}$ (b) $\mathbb{R} - \{-2\}$ (c) $\mathbb{R} - \{-2 , 3\}$ (d) $\mathbb{R}$

....

....

5 If there are an infinite number of solutions of the two equations :
$x + 4y = 7$, $3x + ky = 21$ in $\mathbb{R} \times \mathbb{R}$, then $k =$ ....

(a) 12 (b) 3 (c) 6 (d) 8

....

....

6 The simplest form of the expression $\frac{2}{x-2}-\frac{x}{x-2}$ is .... where $x \neq 2$

(a) $\frac{2}{x-2}$ (b) $\frac{x}{x-2}$ (c) -1 (d) 1

....

....

7 The common domain of the two fractions $\frac{7}{x-5}$, $\frac{8}{x-3}$ is ....

(a) $\mathbb{R}$ (b) $\mathbb{R}-\{5, 3\}$ (c) $\mathbb{R}-\{5\}$ (d) $\mathbb{R}-\{3\}$

....

....

8 If $x \neq 0$, then $\frac{5x}{x^2+1} \div \frac{x}{x^2+1} =$ ....

(a) -5 (b) -1 (c) 1 (d) 5

....

....

9 If $\left(\frac{5}{3}\right)^{x}=\frac{9}{25}$, then $x =$ ....

(a) 3 (b) 2 (c) -3 (d) -2

....

....

Group (2): Answer the following questions showing the steps of solution:

(10) Find n (x) in the simplest form showing its domain where.

$$n(x) = \frac{x^3 - 1}{x^2 + 4x - 5} \times \frac{x + 5}{x^2 + x + 1}$$

(11) Find in R × R the solution set of the two equations

$2x + y = 1$, $x + 2y = 5$

(12) Find n (x) in the simplest form showing its domain where:

$$n(x) = \frac{x-3}{x^2-9} + \frac{x^2-2x-8}{x^2+5x+6}$$

(13) Find in $R \times R$ the solution set of the two equations:

$x = y$, $x^2 + y^2 = 32$

(14) If $n_1(x) = \frac{x^2-4}{x^2+x-6}$, $n_2(x) = \frac{x^2-x-6}{x^2-9}$, show whether $n_1 = n_2$ or not , and why.

(15) **By using the general formula , find in $\mathbb{R}$ the solution set of the equation :**

$x^2 - 2x - 4 =$ zero (rounding the results to two decimal places).

(16) If A and B are two events from the sample space of a random experiment , $P(A) = 0.8$, $P(B) = 0.5$ and $P(A \cap B) = 0.4$

, then find : 1 $P(\grave{A})$ 2 $P(A \cup B)$ 3 $P(A - B)$

محافظة دمياط
مديرية التربية والتعليم
توجيه الرياضيات

نموذج استرشادي لامتحان إتمام الدراسة بمرحلة التعليم الأساسي
الفصل الدراسي الثاني 2024 \ 2025
المادة : الجبر والاحصاء (مترجم)
التاريخ : ..../ .... / 2025
زمن الإجابة : ساعتان

عدد أوراق الإجابة (6) ورقات بخلاف الغلاف وعلي الطالب مسئوليه المراجعة والتأكد من ذلك قبل تسليم الكراسة في نهاية الوقت المخصص للإجابة

رقم السؤال	الدرجة رقما	الدرجة كتابتا	المقدر	المراجع
السؤال الأول				
السؤال الثاني				
السؤال الثالث				
السؤال الرابع				
السؤال الخامس				
المجموع				

مجموع الدرجات

رقم المراقبة

قص —

نموذج استرشادي لامتحان إتمام الدراسة بمرحلة التعليم الأساسي
الفصل الدراسي الثاني 2024 \ 2025
المادة : الجبر والاحصاء (مترجم)
التاريخ : ..../ .... / 2025
زمن الإجابة : ساعتان

رقم المراقبة

عدد أوراق الإجابة (6) ورقات بخلاف الغلاف وعلي الطالب مسئولية المراجعة والتأكد من ذلك قبل تسليم الكراسة في نهاية الوقت المخصص للإجابة

الإدارة التعليمية : ....

اسم الطالب رباعيا : ....

المدرســــــــــة : ....

رقم الجلوس : ....

توقيع الملاحظين :

1 - ....

2 - ....

توقيع الملاحظين بصحة بيانات الطالب كما وردت رقم جلوس الطالب ومطابقة عدد أوراق كراسة الإجابة عند استلامها من الطالب

Fist question :

(a) Choose the correct answer :

(1) If A , B two event of sample space of random experiment , $A \subset B$, then
$P(A \cup B)$ = ……….

(a) zero **(b) 1** **(c) P (A)** **(d) P (B)**

………………………………………………………………………………………………

(2) The domain of f : $f(x) = \frac{x^2 - 5x - 14}{x^2 + 9}$ is ……..

(a) R **(b) R – { – 3 }** **(c) R – { 3 , – 3 }** **(d) R – { 2 , – 7 }**

………………………………………………………………………………………………

(3) The two straight lines X + 1 = 0 , Y = 3 are ……….

(a) congruent **(b) perpendicular**

(c) parallel **(d) intersecting and not perpendicular**



………………………………………………………………………………………………

(b) If $n_1(X) = \frac{x^2 + 2x}{x^2 + 4x + 4}$, $n_2(x) = \frac{2x}{2x + 4}$

prove that : $n_1 = n_2$

………………………………………………………………………………………………
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بقية الأسئلة في الصفحة التالية

Second question :

(a) Choose the correct answer :

(1) The straight line Y = 3X – m passing thought origin point , then m = ……..

(a) zero (b) 2 (c) 3 (d) 5

……………………………………………………………………………………………

(2) If X is a negative number then the greatest number of the following is …….

(a) 5 X (b) $\frac{5}{X}$ (c) 5 + X (d) 5 – X

……………………………………………………………………………………………

(3) The degree of the equation : 3X + 4Y + XY = 5 is ………

(a) zero (b) first (c) second (d) third

……………………………………………………………………………………………



(b) Find in R × R solution set of : Y – X = 8 , Y = 2 – X

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بقية الأسئلة في الصفحة التالية

Third question :

(a) Choose the correct answer :

(1) If A is event from the sample space of random experiment and probability of non-occurrence event A is 25 % then P ($A^\backslash$) = ……..

(a) 75% (b) 25% (c) zero (d) 1

………………………………………………………………………………………………

(2) set of zeroes of f : f (x) = X^2 –5 X is ……..

(a) { 0 } (b) { –5 } (c) { 0 , –5 } (d) { 0 , 5 }

………………………………………………………………………………………………

(3) If ab = 3 , ab^2 = 12 , then b = ……

(a) 4 (b) 2 (c) – 2 (d) $\pm$ 2

………………………………………………………………………………………………

(b) Find n (X) in simplest form showing its domain :

$$n(X) = \frac{2x^2+6x}{x^2-9} \times \frac{x-3}{2x}$$

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بقية الأسئلة في الصفحة التالية

Forth question :

(a) Find in R × R solution set of : $Y = 4 - X$, $Y^2 - X^2 = 24$

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(b) (a) If $n(x) = \frac{x^2 - 2x}{(x-2)(x^2+2)}$

(1) Find $n^{-1}(x)$ and identify the domain

(2) If $n^{-1}(x) = 3$ what is the value of x ?



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بقية الأسئلة في الصفحة التالية

Fifth question :

(a) by using general formula : Find in R × R solution set of :

$$X^2 + 3x + 1 = 0$$

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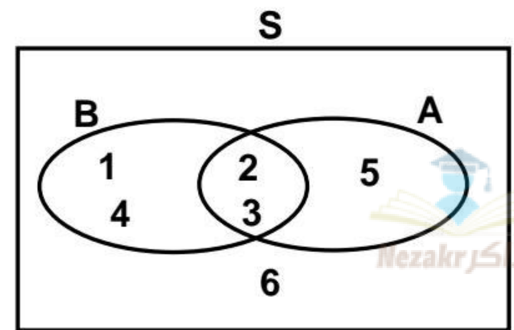
(b) in the opposite figure :

If A , B two event in sample space of random Experiment then find :

(1) P (A ∩ B)

(2) P (A – B)

(3) probability of non-occurrence event A



....

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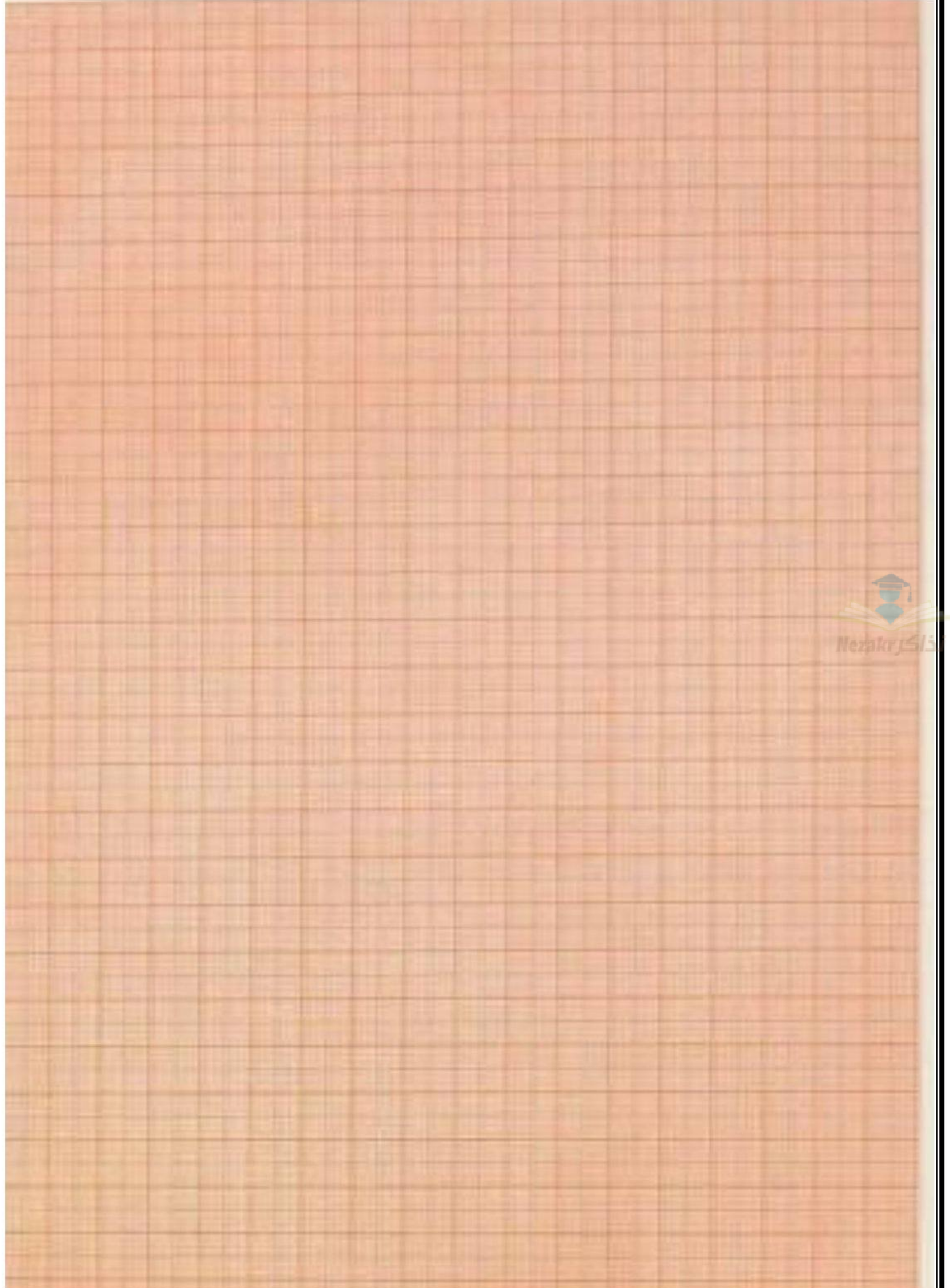
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انتهت الأسئلة


Nezakr

إدارة:..............................المدرسه..

الإسم : .... رقم الجلوس :..........................

El-Gharbia Educational Governorate — Third year preparatory

Central Mathematics Supervision — Algebra and Statistics — Time: 45 minutes

Second Term Practice Test 2024-2025

الإختبار فى صفحتين — (Calculators are permitted)

Q1	Choose the correct answer from those given:
1	The number of solutions of the two equations: $x + 2y = 5$ and $y - 5 =$ zero together in $\mathbb{R}\times\mathbb{R}$ is ……… (a) Zero (b) one (c) two (d) three
2	If $ab = 3$ and $ab^3 = 27$, then $b =$ ……….. (a) 9 (b) 3 (c) $\pm$ 3 (d) zero
3	If $x^2 + y^2 =$ zero, $2x + 3y =$ ………… (a) zero (b) 2 (c) 3 (d) 5
Q2	Find algebraically in $\mathbb{R}\times\mathbb{R}$ the solution set of the two equations: $y = 2x - 3$, $x + 2y = 4$ together. …………………………………………………………………… …………………………………………………………………… …………………………………………………………………… …………………………………………………………………… …………………………………………………………………… …………………………………………………………………… …………………………………………………………………… …………………………………………………………………… …………………………………………………………………… …………………………………………………………………… ……………………………………………………………………

Q3	Find in $\mathbb{R}$ using the general formula, the solution set of the equation $2x^2 - 5x + 1 = 0$ approximating the results to one decimal place.
Q4	Find in $\mathbb{R} \times \mathbb{R}$ the solution set of the two equations: $x y = 9$, $y = x$ together.

Best Wishes

امتحانات رقم (3)

الترم الثانى





Sharkia Governorate. Subject: Algebra Bank of questions

General guidance of mathematics 2024 – 2025 Time: 2 hours

First Model

First group: choose the correct answer from the given ones:

① the simple form of the function $f(x) = \frac{x-2}{2-x}$ *where* $x = 2$ is ....

A) 1 B) -1 C) 2 D) -2

② If $n_1(x) = \frac{1}{x-3}$, $n_2(x) = \frac{x}{x-3}$ *and* $n(x) = n_1(x) + n_2(x)$

Then the domain of $n^{-1}(x)$ = ...

A) $\mathbb{R} - \{0\}$ B) $\mathbb{R} - \{3\}$ C) $\mathbb{R}$ D) $\mathbb{R} - \{-1, 3\}$

③ If $2^x = 3$; *then* $\left(\frac{1}{2}\right)^x$ = ...

A) 0 B) -1 C) $\frac{1}{3}$ D) 3

④ If the two equations $x - ky = L$, $2x - 4y = 1$ have infinite of

Solutions in $\mathbb{R} \times \mathbb{R}$; then k × L= ....

A) 2 B) 1 C) 8 D) 4

⑤ If the vertex of the curve of the quadratic function

$f : f(x) = ax^2 + bx + c$ *is* $(1, 4)$, $a > 0$; then the number of solutions
Of the equation $f(x) = 0$ is = ...

A) 0 B) 1 C) 2 D) infinite number

⑥ If A and B are mutually exclusive events from a sample space of
a random experiment where $P(A) = 0.3$ $P(A \cup B) = 0.6$ then
$P(B)$=..............

A) 0.3 B) 0.6 C) 0.7 D) 0.9

⑦ the solution set of the two equations $2y = x - 5$, $4x + y = 2$
in $IR \times IR$ is ....

A) $(-2, 1)$ B) $\{(-2, 1)\}$ C) $\{(-1, 2)\}$ D) $\{(1, -2)\}$

⑧ The set of Zeros of the function f where $f(x) = \frac{x^2-3x+2}{x-2}$ is ………..

A) $\{2\}$ B) $\{1\}$ C) $IR - \{2\}$ D) $\{1, 2\}$

⑨ If $n(x) = \frac{x^2-2x}{x^2-3x+2}$ $then\ n^{-1}(0)$ = ……………….

A) 0 B) 2 C) -1 D) undefined

Second group: answer all the following questions:

① Find $f(x)$ in the simplest form showing the domain where:

$f(x) = \frac{x^2-6x+9}{x^3-27} + \frac{x^2-3x}{x^2+3x+9}$ then find $f(3)$ if possible.

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② Find using the general formula the solution of the following equation In $\mathbb{R}$:

$x^2 - 2x = 4$($a\ pproxmafing\ to\ the\ nearest\ two\ decimale\ places$)

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③ If $n_1(x) = \frac{x^2-x}{x^3-2x^2}$, $n_2(x) = \frac{x^2-3x+2}{x^3-4x^2+4x}$ $prove\ that\ n_1 = n_2$

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④ Find in $\mathbb{R} \times \mathbb{R}$ $the\ solution$ set of the two equations

$x + y = 2$, $y + x = 2xy$

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⑤ Find in the simplest form showing the domain of f where

$f(x) = \frac{2x-6}{x^2-9} - \frac{8}{3-x^2-2x}$

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⑥ a box contains 15 balls, 6 of them are number from 1 to 6 ; 9 of the balls are green number from 7 to 15 ; a ball is drawn rend only from the box find the probability of each the following events

① The drawn ball is red or has an odd number on it.

② The drawn ball is green or has an even number on it.

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⑦ If the domain of the function: $n(x) = \frac{L}{x} - \frac{8}{x+m}$ $is\ \mathbb{R} - (0, -1)$ and $n(-3) = 1$ find the value of m and L

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General guidance of mathematics **2024 – 2025** **Time: 2 hours**

Second Model

<u>First group</u>: choose the correct answer from the given ones.

① $\sqrt{25-9}$ = …………………

A) 3 B) 4 C) 1 D) -1

② the domain of the multiplicative inverse of the function $f: f(x) = \frac{x-1}{x^2+1}$ is ……………

A) $\mathbb{R} - \{2, 1, -2\}$ B) $\mathbb{R} - \{2, -2\}$ C) $\mathbb{R}$ D) $\mathbb{R} - \{1\}$

③ If $x - y = 2$, $x + ky = 5$ are parallel then k = ………………………

A) 2 B) -1 C) 6 D) 3

④ If $\frac{x}{y} = 3$, $y^2 = 4$ *then* x = ………………

A) ± 6 B) -6 C) 6 D) 3

⑤ If A⊂ B then P $(A - B)$= ………………

A) $P\ (B)$ B) *Zero* C)$P\ (A)$ D) 1

⑥ If $2^x = 3$ *then* 8^{-x} = ……………

A) -27 B) 81 C) $\frac{1}{27}$ D) $\frac{1}{81}$

⑦ the point $(-2, -1) \notin$ to the straight line ……….

A) $y - x = 1$ B) $x - y = -1$ C) $x = -2$ D) $y = 1$

⑧ the point of intersecting of the two straight lines $x + 3 = 0, x = y$ is …………

A) $(3, 3)$ B) $(3, 0)$ C) $(-3, -3)$ D) $(0, 0)$

⑨ **the common domain of the two fraction** $\frac{3}{x-1}$, $\frac{x+2}{2x}$ **is …………**

A) $\mathbb{R} - \{1\}$ **B)** $\mathbb{R} - \{0, 1\}$ **C)** $\mathbb{R} - \{0, 1, -2\}$ **D)** $\mathbb{R} - \{0\}$

Second group: Answer all the following questions and show the steps:

① **Find in** $\mathbb{R} \times \mathbb{R}$ ***the solution*** **set of the following two equations:**

$x - y = 1$, $y^2 + x = 7$

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② **Find** $n(x)$ **in the simplest form showing the domain:**

$$n(x) = \frac{x^2+3x+2}{x^2-4} + \frac{3x-x^2}{x^2-x-6}$$

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③ **Find the solution set of the following equation in** $\mathbb{R}$**:**

$2x^2 - 4x + 1 = 0$ (*a pproxinating to the nearest two decimal places*)

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④ **Find in** $\mathbb{R} \times \mathbb{R}$ **the solution set of the following two equations:**

$x - y = 3$, $2x + y = 6$

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⑤ **Find** $n(x)$ **in the simplest form, showing the domain:**

$n(x) = \frac{x^3-27}{x^2-9} \times \frac{x+3}{x^2+3x+9}$ **then find** $n(3)$ **if possible.**

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⑥ **If** $f(x) = \frac{x^2-k}{x^2-mx+6}$ **, its domain is** $\mathbb{R} - \{2, 3\}$

$f(4) = 9$ **find the value of** mk

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⑦ **If A and B are two events from a simple space of random experiment where:** $P(A) = 0.4$, $P(B) = 0.5$, $P(A \cup B) = 0.8$ **find each of the following**

① $P(A)'$ ② $P(A \cap B)$

Sharkia Governorate. **Subject: Algebra** **Bank of questions**

General guidance of mathematics **2024 – 2025** **Time: 2 hours**

Third Model

First group: choose the correct answer from the given answers.

① If the domain of the algebraic fraction $n(x) = \mathbb{R} - \{2, 3, 4\}$ then $n(3)$= ...

A) 3 B) 2 C) 4 D) *does not exist*

② the equation of the axis of symmetry of the curve of the function f where $f(x) = x^2 - 4$ is ………………

A) $x = -4$ B) $x = 0$ C) $y = 0$ D) $y = -1$

③ the point $(2, -1)$ not belong to the straight line whose equation ………

A) $x + y = 1$ B) $x - y = 3$ C) $x = 2$ D) $y = 5$

④ if $n(x) = \frac{x}{x-1}$ then the domain of $n^{-1}(x)$ is ……………

A) $\mathbb{R} - \{0, 1\}$ B) $\mathbb{R} - \{0\}$ C) $\mathbb{R} - \{1\}$ D) $\{1, 0\}$

⑤ The lines $L_1: 3x + 7y = 0$, $L_2: 5x + 9y = 0$ intersect at …………

A) *first quaidrant* B) *second quaidrant*

C) *third quaidrant* D) *origin point*

⑥If A and B are two events from the sample space. Of a random experiment and A⊂B which of the following statement is incorrect?

A) $P(A \cup B)$ B) $P(A \cap B) = P(A)$ C) $P(A - B) = 0$ D) $P(A - B) = PB$

⑦ If the algebraic fraction $\frac{x-a}{x+7}$ is the multiplicative inverse of the algebraic fraction $\frac{x+7}{x+5}$ then a = …………

A) -7 B) -5 C) 7 D) 5

⑧ the set of zero of the function f *where* $f(x) = -x$ is ……………

A) $\{-1\}$ B) $\{0\}$ C) $\{2\}$ D) $\mathbb{R}$

⑨ If the curve of the quadratic function does not cut the $x - axis$ at any point then the number of solutions of the equation $f(x) = 0$ in $\mathbb{R}$ is ……………

A) *two solution* B) *unic solution*
C) 0 D) *infinit number of solution*

Second group: Answer all the following questions:

① Find using the general formula the solution set of the following equation in $\mathbb{R}$ $x(x-2) = 1$
(a proximate the result to the nearest two decimal places)

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② If $f(x) = \frac{x^3+x}{x^2+1} + \frac{2\,x^3+4x^2+8x}{x^3-8}$ find $f(x)$ in the simplest form showing the domain

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③ Find in $\mathbb{R} \times \mathbb{R}$ the solution set of the two following equations
$2x - y = 3$, $x + 2y = 4$

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④ find $n(x)$ in the simplest from showing the domain
$n(x) = \frac{x^2-2x-15}{x^2-9} \div \frac{10-2x}{x^2-6x+9}$

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⑤ Find the solution set of the following two equations in $\mathbb{R} \times \mathbb{R}$
$x + 2y = 2$, $x^2 + 2xy = 2$

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⑥ In the experiment of tossing a regular die once and observe the appearing number on the upper face and *if*:
① A is the event of getting an even number.
② B is the event of getting a prime number.
Find: $P(A)$, $P(B)$, $P(A \cap B)$

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⑦ If $n(x) = \frac{k}{x} + \frac{9}{x+m}$ it's domain is $\mathbb{R} - \{0, 4\}$ *and* $n(5) = 2$,
Find the value L and m

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General guidance of mathematics 2024 – 2025 Time: 2 hours

Model (4)

First group: choose the correct answer from the given answers.

① the probability of impossible event = ……………

A) 0 B) ∅ C) 1 D) $\mathbb{S}$

② the solution set of the equations $x + 2y = 0$, $2x - 3y = 0$ in $\mathbb{R} \times \mathbb{R}$ is …

A) $\{(-2, 0)\}$ B) $\{(3, 2)\}$ C) $\{(0, 0)\}$ D) $\{(3, 2)\}$

③ If $2^7 \times 3^7 = 6^k$; *then* k= ………

A) 14 B) 7 C) 6 D) 5

④ If the ratio between the perimeters of two squares 1: 2 then the ratio between their areas is ……………

A) 1: 2 B) 2: 1 C) 1: 4 D) 4: 1

⑤ If $x + y = 4$, $x - y = -2$ *then* $x^2 - y^2$ ……………

A) 8 B) 12 C) -8 D) -12

⑥ If $n(x) = \frac{x}{x^2+9}$, then the domain of n^{-1} = ………………

A) ∅ B) $\mathbb{R}$ C) $\mathbb{R} - \{-3, 3\}$ D) $\mathbb{R} - \{0\}$

⑦ If the curve of the quadratic function paths through the points $(2, 0)$, $(-3, 0)$, $(0, -6)$; then the solution set of the equation $f(x) = 0$ is ………

A) $(-2, 3)$ B) $(-3, 2)$ C) $\{2, -3\}$ D) $\{-3, -6\}$

⑧ a rectangle it's length excides by 2cm from its width, and it's area is $35cm^2$ then it's perimeter = ………… cm

A) 12 B) 24 C) 36 D) 20

⑨ If $z(f) = \{2\}$, $f(x) = x^2 - 2x + a$ then a = ………..

A) 4 B) -4 C) $zero$ D) $undefiend$

Second group: Answer all the following questions:

① solve in $\mathbb{R}$ the following equation: $x^2 - 3x + 1 = 0$
Using the general formula knowing that $\sqrt{5} \simeq 2.24$

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② If A and B are two event from a sample space of a random experiment where $P(A) = 0.7$, $P(B) = 0.6$, $P(A \cap B) = 0.4$ calculate the value of:

① $P(A^{`})$ ② $P(A - B)$ ③ $P(A \cup B)$

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③ Find in $\mathbb{R} \times \mathbb{R}$ the solution set of the following equations

$x = -y$, $5y^2 + 4x^2 = 36$

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④ If $n_1(x) = \frac{x}{x+2}$, $n_2(x) = \frac{2x}{2x+4}$ prove that $n_1 = n_2$

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⑤ Find $n(x)$ in the simplest from showing the domain where:

$n(x) = \frac{x+3}{x^2+6x+9} + \frac{x+2}{x^2+x-2}$

---

⑥ Find $n(x)$ in the simplest from showing the domain where:

$f(x) = \frac{x^3+1}{x^2-x+1} \times \frac{5x+10}{x^2+x-2}$

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⑦ Find the values of a and b knowing that $(1, -1)$ is solution of the equations $ax + by = 7$, $ax - by = 3$

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General guidance of mathematics 2024 – 2025 Time: 2 hours

Model (5)

First group: choose the correct answer from the given answers.

① When a regular coin is tossed once; the probability of getting a head = …

A) 50% B) 25% C) 75% D) 100%

② the common domain of the two functions $\frac{3}{x^2-x}$, $\frac{3}{x^2+1}$ is ……………

A) $\mathbb{R}-\{0\}$ B) $\mathbb{R}-\{1\}$ C) $\mathbb{R}-\{0,1\}$ D) $\mathbb{R}-\{0,\pm1\}$

③ If $x=1$ is one of zero of the function $f : f(x)=\frac{2x^2-kx}{x+k}$ then k = ……..

A) 1 B) 2 C) -1 D) -2

④ If $f(x)=\frac{x^2-2}{x^3-2x}$, $f^{-1}(k)=\frac{1}{2}$, then k = ……………

A) 0 B) 2 C) $\frac{1}{2}$ D) $-\frac{1}{2}$

⑤ If the equations $x+3y=k$, $3x+my=12$ have an infinit solutions in $\mathbb{R}\times\mathbb{R}$ then k + m = ……………

A) 96 B) 4 C) 5 D) 13

⑥ If $x^2+y^2=9$, $xy=2;$ *then* $(x-y)^2$ = ……………

A) 3 B) 5 C) 7 D) 13

⑦ If the domain of the function $f : f(x)=\frac{x+a}{x-b}$ *is* $\mathbb{R}-\{-1\}$, $f(0)=3$ then a – b = ……………

A) 3 B) -1 C) 4 D) 2

⑧ If $\sqrt[3]{x}=8$ *then* $x=$ ……………

A) 512 B) 64 C) 2 D) 32

⑨ If $n_1(x) = \frac{5x}{3x+k}$, $n_2(x) = \frac{1}{x-7}$; and the commend domain of n_1 , n_2 is $\mathbb{R} - \{7, 0\}$ then k = ………..

A) 5　　B) 3　　C) 7　　D) 0

Second group: Answer all the following questions:

① Using the general formula find the solution set of the equation

$x + \frac{1}{x} = 3$

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② Find in $\mathbb{R} \times \mathbb{R}$ the solution set of the equations:

$x - y = 2$,　$x + 2y = 5$

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③ Find in the simplest from the function f showing the domain:

$f(x) = \frac{x^2-4x+4}{x^3-8} \times \frac{x^2+2x+4}{x-2}$

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④ If A, B are two events from a sample space of a random experiment and: $P(A) = \frac{3}{7}$, $P(A \cup B) = \frac{2}{3}$ $find\ P(B)$ in the following cases

① A, B are mutually exclusive events.　　② A⊂B

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⑤ Find in $\mathbb{R} \times \mathbb{R}$ the solution set of the equations:

$x + y = 2$,　$x + \frac{2}{y} = 3$

---

⑥ Find in the simplest from showing the domain.

$f(x) = \frac{9-x^2}{3-2x-x^2} - \frac{5x+10}{2-x-x^2}$

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⑦ If $n_1(x) = \frac{3x^2-15x}{3x^2-21x+30}$, $n_2(x) = \frac{x^2-5x}{x^2-7x+10}$ prove that $n_1 = n_2$

Model (6)

First group: choose the correct answer from the given answers.

① If zeros of the function $f : f(x) = \frac{x^2-5x+a}{x-5}$ $is\ \{2, 3\}$ then a = ………..

A) 2 B) 3 C) 5 D) 6

② If the domain of the function $f : f(x) = \frac{x-3}{x^2-k}$ $is\ \mathbb{R} - \{2, -2\}$ then k = ………

A) 2 B) 4 C) -2 D) -4

③ If $l \in \overline{xy}$ $and\ xL = 3yL$; then the area of the square on $\overline{LX}$ = …… the area of the square on $\overline{xy}$

A) $\frac{16}{9}$ B) $\frac{9}{16}$ C) 3 D) $\frac{1}{9}$

④ If $x + y = 2$ ، $(x + y)^2 + y = 6$ $then\ x$ = ………..

A) 4 B) 2 C) 0 D) 3

⑤ If A is an event from a sample space of a random experiment and $P(A`) = 2\ P(A)$ $then\ P(A`) =$ ……………

A) $\frac{2}{3}$ B) $\frac{1}{3}$ C) $\frac{1}{2}$ D) 2

⑥ If $f(x) = \frac{x^2-4}{x^2-2x}$; $f^{-1}(k) = \frac{2}{3}$ then k = ……………

A) 4 B) $\frac{1}{4}$ C) -6 D) $\frac{2}{3}$

⑦ If $f(x) = \frac{5-x}{x-5}$; $f^{-1}(5) =$ ……………

A) 1 B) -1 C) 0 D) undefined

⑧ **If the equations $2x - 3y = 5$, $4x - 6y = k$ have an infinit number of solutions then k = ………………**

A) 5 B) 6 C) 10 D) -5

⑨ **If $2^x \times 3^x = 36$ *then* x = ………………**

A) 3 B) 4 C) 2 D) 6

Second group: **Answer all the following questions:**

① **Find using the general formula the solution set of the following equation in $\mathbb{R}$: $x^2 + 4x - 2 = 0$ knowing that $\sqrt{6} = 2.45$**

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② **Find in $\mathbb{R} \times \mathbb{R}$ the solution set of the equations:**

$x = y + 4$, $3y = 2 - 4x$

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③ **If the function $f(x) = \frac{x^2 - 2x}{x^3 - 8}$ *find* $f^{-1}(x)$ in the simplest form showing the domain; if $f^{-1}(x) = -2$ find the value of x**

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④ **If A, B are two events from a sample space of a random experiment and: $P(A) = \frac{3}{5}$, $P(B`) = \frac{1}{3}$ *find* $P(A \cup B)$ *if* $P(A \cap B) = \frac{2}{5}$**

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⑤ **Find in $\mathbb{R} \times \mathbb{R}$ the solution set of the following equations:**

$x + 2y = 3$, $x^2 - 4y^2 = 15$

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⑥ **Find in the simplest from showing the domain.**

$f(x) = \frac{3}{x^2 + x - 2} - \frac{3x - 6}{4 - x^2}$

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⑦ **If $n_1(x) = \frac{x^2}{x^3 - 5x^2}$, $n_2(x) = \frac{x}{x^2 - 5x}$ prove that $n_1 = n_2$**

Sharkia Governorate. Subject: Algebra Bank of questions

General guidance of mathematics 2024 – 2025 Time: 2 hours

Model (7)

First group: choose the correct answer from the given answers.

① If $P(A \cap B) = P(B)$ were A, B two events from a sample space of random experiment then.

a) $A \subset B$ b) $B \subset A$ c) $A = \emptyset$ d) A، B are two mutually exclusive events

② the multiplicative inverse of the function $f(x) = \frac{x-7}{7-x}$ is ………..

A) 1 B) $\frac{7+x}{x-7}$ C) -1 D) $\frac{7-x}{x+7}$

③ the solution set of the following equations.
$4x + 3y = 7$, $3x + 4y = 0$ lies on ……….

A) orgin point B) first quarter C) second quarter D) fourth quarter

④ the domain of the function $f(x) = \frac{x-1}{2x^2-5x+2}$ is ………..

A) $\mathbb{R} - \{2\}$ B) $\mathbb{R} - \{1\}$ C) $\mathbb{R} - \left\{\frac{1}{2}\right\}$ D) $\mathbb{R} - \left\{\frac{1}{2}, 2\right\}$

⑤ the set of zeros of the function $f(x) = \frac{x^2-x-6}{x^2-4}$ in $\mathbb{R}$ is ………….

A) $\{2, -2\}$ B) $\mathbb{R} - \{2, -2\}$ C) $\{3, -2\}$ D) $\{3, 2, -2\}$

⑥ Number of solutions of the equations $x - \frac{1}{2}y = 5$, $2x - y = 3$ in $\mathbb{R} \times \mathbb{R}$ is ………….

A) unic solution B) two solution C) an in finit number D) 0

⑦ If A, B are two events from a sample space of a random experiment then the event of an occurring A only is ………….

A) A\` B) $A \cap B$ C) $A - B$ D) $A \cup B$

⑧ the solution set of the equation $x^2 + 4 = 0$ in $\mathbb{R}$ is ……………

A) $\{2, -2\}$ B) $\{2\}$ C) $\{-2\}$ D) $\emptyset$

⑨ If $L^2 - m^2 = 8$, $L + m = \sqrt{2}$ $then$ $(L - m)^2$ = ………………

A) $4\sqrt{2}$ B) $2\sqrt{2}$ C) 16   D) 32

Second group: Answer all the following questions:

① Without using calculate find the solution set of the following equation in $\mathbb{R}$. $x\,(x - 3) = 2(x - 1)$

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② a perimeter of rectangle is 24cm and its area = $35cm^2$

find its demotions.

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③ Find in the simplest form showing the domain for the following function: $f(x) = \frac{3}{x+1} - \frac{2x+1}{1-x^2}$

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④ If $\{(-3, 2)\}$ is the solution set of the two equations $ax + by + 5 = 0$, $ax - by + 1 = 0$ $find\ a, b$

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⑤ If $n(x) = \frac{x^2-2x}{x^2+6x-16}$ find $n^{-1}(x)$ in the simplest form showing the domain, if $n^{-1}(x) = 2$ $Find$ $\sqrt[3]{x}$

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⑥ If A, B are two events from a sample space of a random experiment and $P(A \cap B) = 0.2$, $P(A - B) = 0.2$, $P(B - A) = 0.3$
find: ① $P(A`)$ ② $P\,(A \cup B)$

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⑦ If $n(x) = \frac{x^2+2x-3}{x^2+5x-6} \div \frac{x^2+x-2}{x^2-4}$ find:

① $n(x)$ in the simplest form showing the domain

② the value of x when $f(x) = 3$

Sharkia Governorate. **Subject: Algebra** **Bank of questions**

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Model (8)

First group: choose the correct answer from the given answers.

① If $x = -2$ is once of solution of the equation $x^2 - mx + 8 = 0$ then the value of m = ………………

A) 2 B) -2 C) 4 D) -6

② If $3^{x-y} = 27$ then $y - x$ = ………………

A) 2 B) 3 C) -3 D) -2

③ the domain of multiplicative inverse off the function $f(x) = \frac{2x}{x^2+5x}$ is…

A) $\mathbb{R}$ B) $\mathbb{R} - \{2, 0\}$ C) $\mathbb{R} - \{0, -5\}$ D) $\mathbb{R} - \{0, 5\}$

④ If The probability of a student succeeding is 75% then the probability of his failure is equal to …………

A) $\frac{1}{8}$ B) $\frac{1}{4}$ C) $\frac{1}{2}$ D) $\frac{1}{5}$

⑤ the set of zeros of the function $f(x) = \frac{x^4+1}{x^3-x}$ in $\mathbb{R}$ is …………

A) $\{\pm 1\}$ B) $\{1, 0\}$ C) $\{0, 1, -1\}$ D) $\emptyset$

⑥ If $n_1(x) = \frac{2+a}{x-5}, n_2(x) = \frac{-2}{x-5}$ and $n_1(x) = n_2(x)$ then a = ……………

A) 4 B) -2 C) -4 D) 0

⑦ If $f(x) = \frac{5-x}{x-3}$, then f is not defiend at x = …………

A) 5 B) 2 C) 3 D) -5

⑧ If $\frac{1}{x} + \frac{1}{y} + \frac{1}{xy} = \frac{k}{xy}$ $then$ k = ……………

A) 3 B) $x + y$ C) $x + y + 1$ D) $3 + x + y$

⑨ If $x \neq 0$ then $\frac{5x}{x^2+1} \div \frac{x}{10x^2+10} =$ ……………..

A) 5 B) 50 C) 2 D) 20

Second group: Answer all the following questions:

① Using the general formula to find the solution set of the equation $(x-3)^2 + 1 = 7$ (a pproximating to the nearest two decimal places)

---

② If A, B are two events from a sample space off random experiment and $P(A \cup B) = 0.8$, $P(B) = 0.6$, $P(A \cap B) = 0.4$

Find: ① the probability of non – occurring of A.

② the probability of a curing A without occurring B.

③ the probability of one of the two events occurring at least.

---

③ Two supplementary angles twice of measure of the larger one is equal to seven times of the measure of the smaller one.
Find the measure of the larger angle.

---

④ Find $n(x)$ in the simplest form showing the domain of

$n: n(x) = \frac{x^2+2x+4}{x^3-8} - \frac{9-x^2}{x^2+x-6}$

---

⑤ If $\frac{k+5-x^2}{x^2-3x}$ is the multiplicative inverse of the fraction $\frac{x}{x-3}$ fin the value of k

---

⑥ A right angle triangle with hypotenuse length 13 cm; it's perimeter is 30 cm. Find the length of the two sides of the right angle

---

⑦ Find $n(x)$ in the simplest form showing the domain

$n(x) = \frac{x^2-12x+36}{x^2-6x} \times \frac{4x+24}{36-x^2}$

Sharkia Governorate. Subject: Algebra Bank of questions

General guidance of mathematics 2024 – 2025 Time: 2 hours

Model (9)

First group: choose the correct answer from the given answers.

① If $17x + 51y = 102$ *the* $9x + 27y$ = ……………

A) 54 B) 36 C) 34 D) 18

② If regular die is thrown once, the probability of getting a number greater than 3 is equal to ………………

A) $\frac{2}{3}$ B) $\frac{1}{2}$ C) $\frac{1}{3}$ D) $\frac{1}{6}$

③ If $xy = 12, yz = 20, xz = 15$ *where* $x, y, z \in \mathbb{R}_+$ *than* xyz = ………….

A) 26 B) 60 C) 360 D) 3600

④ If The solution set of the equation $x^2 - kx + 4 = 0$ *is* $\emptyset$ then k could be equal …………………

A) -5 B) 0 C) 4 D) 5

⑤ the set of zeros of the function $f: f(x) = \frac{x^2-5x+6}{x^2+9}$ is …………………

A) $\{2, 3\}$ B) $\{-3, 3\}$ C) $\{2, -3\}$ D) $\{9\}$

⑥ If A, B are two mutually exclusive event of a random experiment then $P(A \cap B)$ = …………………

A) $P(A \cup B)$ B) 0 C) $\emptyset$ D) $P(A) + P(B)$

⑦ the common domain of the two algebraic fractions $\frac{3}{x-5}$, $\frac{x+2}{6x}$ is ………

A) $\mathbb{R} - \{5\}$ B) $\mathbb{R} - \{5, 0\}$ C) $\mathbb{R} - \{5, -2\}$ D) $\mathbb{R} - \{-2, 0\}$

⑧ **If a is negative number, then the greatest number from the following number.**

A) $5-a$ B) $5+a$ C) $5a$ D) $\frac{5}{a}$

⑨ **the function $f(x)=\frac{x-3}{x+7}$ has additive inverse in the domain**

A) $\mathbb{R}-\{3\}$ B) $\mathbb{R}-\{-7\}$ C) $\mathbb{R}-\{3,-7\}$ D) $\{3,-7\}$

Second group: Answer all the following questions:

① **Using the general formula to find the solution set of approximating to the nearest two decimal places.** $1-\frac{2}{x}=\frac{2}{x^2}$

---

② **Find $n(x)$ in the simplest form showing the domain where**

$n(x)=\frac{x^2-2x-15}{x^2-9}-\frac{2x^2-50}{x^2-6x+9}$

---

③ **If the multiplicative inverse of the algebraic fraction $\frac{x^2+2x}{x^2-2x-k}$ is $\frac{x-4}{x}$ Find the value of k.**

---

④ **If A, B are two events from a sample space off random experiment and $P(A)=0.6$, $P(B)=0.7$, $P(A\cap B)=0.4$**

Find: ① $P(A-B)$ ② $P(A\cup B)$

③ **the probability of non – occurring the event B**

---

⑤ **Find the solution set of the equation in $\mathbb{R}$: $x+y=10$ ، $x^2-y^2=40$**

---

⑥ **If the domain of the function n where $n(x)=\frac{b}{x}-\frac{9}{x+a}$ is $\mathbb{R}-\{0,7\}$, $n(5)=2$ Find the value of a, b**

---

⑦ **the sum of two rational numbers is 12 and 3 times of the smaller number is more than twice the larger number add to one. Find the two numbers.**

Sharkia Governorate. **Subject: Algebra** **Bank of questions**

General guidance of mathematics **2024 – 2025** **Time: 2 hours**

Model (10)

First group: choose the correct answer from the given answers.

① the domain of the function $n(x) = 5x^0, x \neq 0$ is ……………

A) $\mathbb{R} - \{5\}$ B) $\mathbb{R} - \{-5\}$ C) $\mathbb{R}$ D) $\mathbb{R} - \{0, 5\}$

② the number of solutions of the equation $x = 3$ in $\mathbb{R} \times \mathbb{R}$ is ……………

A) 1 B) 2
C) 0 D) $an\ infinit\ number\ of\ solutions$

③ If the point of intersection of the two straight lines $x = 2, y = 5a$ lies in the fourth quadrant. Then a can be equal ……….

A) -4 B) 2 C) 1 D) 4

④ Ahmed's age now is x years and Omer's age now is y years then the sum of their ages seven years ago ……………

A) $x + y + 7$ B) $x + y$ C) $x + y + 14$ D) $x + y - 14$

⑤ If $P(A \cap B) = P(B)$ where A and B are two events from a sample space of a random experiment. Then ………….

A) $A \subset B$ B) $B \subset A$
C) $A = \emptyset$ D) A, B are mutually exclusive events

⑥ the two straight lines $2x = 3, 3y = 2$ are …………………

A) $paralle$ B) $congurent$
C) $perpendcular$ D) $intersecting\ and\ not\ perpendcular$

⑦ If $z(f) = \{2\}, f(x) = x^2 - 3x + a$, then a = …………………

A) 0 B) 2 C) -2 D) -1

⑧ The common domain of the following functions

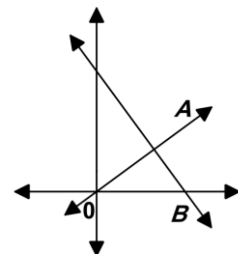
$n_1(x) = \frac{5}{x+2}$, $n_2(x) = \frac{x}{x^2-4x}$, $n_3(x) = \frac{x-2}{x+3}$ is ....

A) $\mathbb{R} - \{-2, 3, 0\}$ B) $\mathbb{R}$ C) $\mathbb{R} - \{4, 0, -2, -3\}$ D) $\mathbb{R} - \{0, 4\}$

⑨ the function f where $f(x) = \frac{x-2}{x-5}$ has additive inverse in the domain

A) $\mathbb{R} - \{5\}$ B) $\mathbb{R} - \{2\}$ C) $\mathbb{R} - \{-5\}$ D) $\mathbb{R} - \{2, 5\}$

Second group: Answer all the following questions:



① In the opposite figures:

If the line $L_1: x + y = 8, L_2: x - y = 0$

and $L_1 \cap L_2 = \{A\}$ Find the area of the triangle ABO

---

② Find in $\mathbb{R} \times \mathbb{R}$ the solution set of the equations:

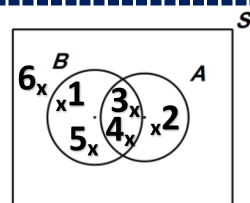
$x + y = 2$, $1 + \frac{x}{y} = 2x$ where $(y \neq 0)$

---

③ Using the general formula find the solution set of the following equations: $x(3x + 1) = 6x - 1$

---

④ If $n_1(x) = \frac{x^3+1}{x^3-x^2+x}$, $n_2(x) = \frac{x^3+x^2+x+1}{x^3+x}$ show if $n_1 = n_2$ or not and give the reason.



⑤ In the opposite figure:

If A, B are two events in a sample space of a random experiment find: ① $P(A \cap B)$

② $P(A - B)$ ③ The probability of non – occurring the event A

---

⑥ If $n(x) = \frac{2x-6}{x^2-x-6}$, $k(x)$ is its additive inverse Find $k(2)$, $k(3)$

---

⑦ Find $n(x)$ in the simplest form showing the domain where

$n(x) = \frac{x^2+3x}{x^2-9} + \frac{6-3x}{x^2-5x+6}$; then find $n(0)$, $n(2)$ if possible

امتحانات رقم (4)

الترم الثانى





MODEL EXAM NO (1)

[Q1] [A] Choose the correct answer:

(1) The two equations 3 X 1 – 5 Y = 8 ⁻ X + K Y = m have infinite solution in R × R when 9 K m= ....

a) $\frac{-10}{3}$ b) $\frac{16}{3}$ c) – 16 d) – 160

(2) ⸱ the set of zeros of F (x) = K X +3 is ∅, then K = ...

a) – 3 b) 3 c) 0 d) 1

(3) The function n(x) = $\frac{x-2}{x-5}$, has an additive inverse in the domain....

a) R – {2} b) R – { 5 , –2} c) R – {5} d) R – { 5 , 2 }

[B] If $n_1(x) = \frac{3x-6}{x^2-4}$, $n_2(x) = \frac{3x+3}{x^2+3x+2}$ prove that $n_1(x) = n_2(x)$ for all the values of X which belongs to the common domain and find this domain?

[Q2] [A] Choose the correct answer:

(1) If S is a sample space of a random experiment, then P(S\') = ...

a) 1 b) 0 c) – 1 d) $\frac{1}{2}$

(2) If $\frac{x-a}{x+3}$ is an algebraic fraction has a multiplicative inverse is $\frac{x+3}{x+5}$ then a = ...

a) – 5 b) – 3 c) 5 d) 3

(3) If $X^2 + y^2 = 5XY$ then $\frac{x^2}{y^2} + \frac{y^2}{x^2}$ = ...

a) 32 b) 23 c) – 32 d) – 23

[B] By using a general formula and find in R the solution set of the equation: $-1 - \frac{2}{x} = \frac{5}{x^2}$, approximating the result to nearest two decimal places.

[Q3]

[A] Choose the correct answer:

(1) The two straight lines: X = 3, Y = 5 are ....

a) Parallel
b) perpendicular
c) Coincident
d) Intersecting and not perpendicular

(2) The equation: $\frac{1}{x} + \frac{1}{y} = 3$ in .... Degree ($x \neq y \neq 0$)

a) First b) Second c) Third d) Fourth

(3) The number of solution of the equation : $2x - 6 = 0$ in R^2 is ....

a) 1 b) 2 c) 3 d) infinite

[B] A rectangle of perimeter 14 cm. and its diagonal length 5 cm.

Find its two dimensions?

[4]

[A] If the set of zeros of $F(X) = \frac{x^2 - ax + 9}{bx + 4}$ is { 3 }, and its domain $R - \{2\}$.

Find the value of a , b ?

[B] If A, B are two events of the sample space of a random experiment, and P (A− B) = $\frac{5}{12}$, P (B) = $\frac{1}{3}$, P (A) = P (A\`),

Find: ① probability of occurrence one of them at least.

② Probability of occurrence event B only.

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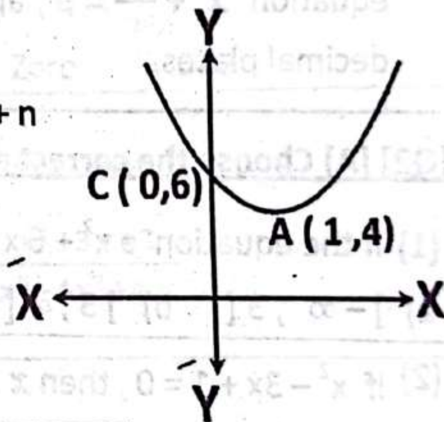
[5]

[A] Find in the simplest form: n (X) = $\frac{x^2-2x-15}{x^2-9} \div \frac{x^2-25}{x^2-3x}$

and showing its domain. If n (k) = $\frac{1}{3}$,

Find the value of K.

[B] In the opposite figure:



The curve of $\mathcal{F}$: $\mathcal{F}$ (x) = k X^2 + m X + n

Cut y-axis in C (0 , 6) , A (1 , 4)

is the vertex of the curve

Find the value of K, m, n.

End of the questions

MODEL EXAM NO (2)

[Q1] [A] Choose the correct answer:

(1) If A is an event in a sample space of a random experiment, then $P(A \cup A')$ = ...

a) 1   b) 0   c) −1   d) half

(2) The set of zeros of $\mathcal{F}(x) = \frac{x^2-x-2}{x^2-4}$ is ......

a) {−1, 2}   b) {−2, 2}   c) {−1}   d) {−2}

(3) The intersecting point of the two straight lines:
$3x + y = 0$, $2x = 7y$, lies in ....

a) First quadrant   c) Third quadrant
b) Second quadrant   d) On origin point

[B] By using a general formula, find in $\mathcal{R}$ the solution set of the equation $x + \frac{4}{x} = 6$, approximating the result to nearest three decimal places.

[Q2] [A] Choose the correct answer:

(1) If the equation $a x^2 + 6x + 3 = 0$, hasn't real solution then a ...

a) $]-\infty, 3[$ b) $]3, \infty[$ c) {3}   d) {3, −3}

(2) If $x^2 - 3x + 1 = 0$, then $x + \frac{1}{x}$ = ... (where $x \neq 0$)

a) 1   b) 3   c) −1   d) −3

(3) If $n(x) = \frac{x^2-x}{x^2-1}$, $n^{-1}(k) = 3$, then K = ...

a) $-\frac{3}{2}$ b) $\frac{1}{2}$ c) $\frac{3}{4}$ d) $\frac{4}{3}$

[B] A rhombus the difference between their diagonal 4 cm. and its perimeter 40 cm. Find the length of its diagonals?

[Q3]

[A] Choose the correct answer:

(1) A two digit number, its unit digit = its tens digit = X, then the number is ....

a) X^2 b) 2 X c) 11 X d) $10 X^2$

(2) If n is a function: n (x) = $\frac{x+1}{x-1} + \frac{1-x}{x-1}$,($x \neq 1$), then n in the simplest form is ....

a) 0 b) $\frac{2}{2x-2}$ c) $\frac{2}{x-1}$ d) $\frac{2}{(x-1)^2}$

(3) If A, B are two mutually exclusive events from a sample space, then $A \cap B$ = ...

a) $\emptyset$ b) S c) Zero d) 1

[B] If n_1 , n_2 two algebraic fractions, Prove that $n_1 = n_2$?

Where $n_1(x) = \frac{x^2-x}{x^3-2x^2}$, $n_2(x) = \frac{x^2-3x+2}{x^3-4x^2+4x}$

[Q4]

[A] Find n(x) in the simplest form showing its domain:

$$n(x) = \frac{x^2-2x-15}{x^2-9} \div \frac{2x-10}{x^2-6x+9}$$

[B] If the domain of $n(x) = \frac{k}{x-3} + \frac{4}{x+m}$ is $\mathcal{R} - \{3, -4\}$, $n(2) = 7$

Find the value of k , m ?

[Q5]

[A] If A,B are two events of the sample space of a random experiment, and $P(A) = \frac{1}{2}$, $P(B) = \frac{2}{5}$, $P(A \cap B) = \frac{1}{10}$ Find:

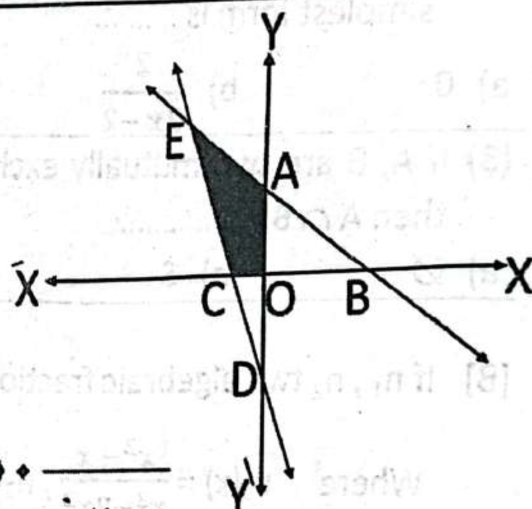
① $P(A \cup B)$ ② $P(B - A)$

[B] In the opposite figure:

If the equation of $\overleftrightarrow{AB}$: $X + Y = 3$,

Equation of $\overleftrightarrow{CD}$: $2X + Y + 4 = 0$

Find the area of the shaded part



End of the questions

MODEL EXAM NO (3)

[Q1] A) Choose the correct answer:

(1) If A , B are two events of the sample space of a random P ($A \cap B$), ($A - B$) $\cup$ ($B \cap A$) = ...

a) 1 b) S c) B d) A

(2) If the domain of F (X) = $\frac{-2x}{x-5} - \frac{1}{k-x}$ is R − { 5 , − 2 } ,then k = ...

a) 2 b) 5 c) −2 d) −5

(3) If AB = 12, BC = 20, AC = 15 where A,B,C $\in R^+$ then ABC= ....

a) 360 b) 3600 c) 60 d) 36

[B] By using a general formula and, find in R the solution set of the equation: $(X - 2)^2 = 6X$, approximating the result into two decimal places

[Q2] A) Choose the correct answer:

(1) If $x + \frac{2}{x} = 1$, then $\frac{x^2+x+2}{x^2(1-x)}$ = ... where $x \neq 0$

a) 1 b) 2 c) −1 d) −2

(2) The two equations X + 4 Y = 7, 3 X + K Y = 21 have infinite solution in R × R when K= ....

a) 4 b) 7 c) 12 d) 21

(3) If F (X) = $x^2 + ax + 1$, Z(f) = $\varnothing$, then a can be = ...

a) 3 b) 2 c) 1 d) − 2

B): Find F (X) in its simplest form and showing its domain,

$$F(x) = \frac{x^2+2x}{x^3-27} \div \frac{x+2}{x^2+3x+9}$$

[Q3]

[A] Choose the correct answer:

(1) The two straight lines X = 3 , 3Y = 5 are ....

a) perpendicular c) Parallel

b) Coincide d) Intersecting and not perpendicular

(2) If $n(x) = \frac{x-1}{x-2}$, then the domain of $n^{-1}(x)$ = ...

a) R b) R − {1} c) R − {1, 2} d) R − {2}

(3) If A , B are two events from the sample space of a random experiment, $A \subset B$, then $P(A \cup B)$ = ...

a) Zero b) P (B) c) P (A) d) $P(A \cap B)$

[B] If $n_1(x) = \frac{x^3+1}{x^3-2x^2+x}$, $n_2(x) = \frac{x^3+x^2+x+1}{x^3+x}$

Show that if $n_1(x) = n_2(x)$ Give the reason?

[Q4] A) If $n(X) = \frac{x^2-2x}{x^2+x-6}$ Find:

① $n^{-1}(x)$ showing its domain

② If $n^{-1}(x) = 2$, find the value of X.

[B] If the length of a rectangle exceeds its width with 3 cm, its area 28 cm^2. find its perimeter.

[Q5]

A) Find in $\mathcal{R} \times \mathcal{R}$ the solution set of two equations:

$$2|X| - |Y| = 2 \ , \ 3|X| + |Y| = 3$$

[B] If A , B are two events of the sample space of a random experiment, and P (A) = P (A'), $P(B) = \frac{5}{8} P(A)$, $P(A \cap B) = \frac{1}{16}$,

Find: ① P (B) , P (A∪B)

② P (A – B)

End of the questions

MODEL EXAM NO (4)

[Q1] A) Choose the correct answer:

(1) If $n_1(x) = \frac{1}{x-3}$, $n_2(x) = \frac{9}{x+8}$ then the domain of $(n_1 . n_2)$ = ...

a) {3 , −8} b) R−{3 , −8} c) R−{3} d) R−{8}

(2) If the two equations X + 2 Y = 1 , 2 X + a Y = 5 have one solution, then a ∈ R − { .... }

a) 1 b) 2 c) 4 d) −4

(3) If X + Y = 15 , then $(X-10)^3 + (Y-5)^3$ = ...

a) 0 b) 25 c) 125 d) 625

[B] Find the value of a , b where (1 , 2) is solution of two equations :

a X + b Y + 5 = 0 , 2 a X + b Y − 2 = 0

[Q2] A) Choose the correct answer:

(1) A card is drawn randomly from some cards numbered from 1 to 50, the probability of this card contains a non− perfect square is ....

a) $\frac{7}{50}$ b) $\frac{43}{50}$ c) $\frac{1}{2}$ d) $\frac{9}{50}$

(2) If $X^2 - Y^2 = 80$, X − Y = 8 , The mean of the two numbers X and Y is

a) 2 b) 3 c) 4 d) 5

(3) If $x + \frac{1}{x-2} = 4$,then $(x-2)^2 + \frac{1}{(x-2)^2}$ = ... where x ≠ 0

a) −2 b) 2 c) 4 d) 0

[B] If the domain of $n(x) = \frac{k}{x-3} + \frac{4}{x+m}$ is $R - \{3, -4\}$, $n(2) = 7$,

Find the value of k , m ?

[Q3]

[A] Choose the correct answer:

(1) The set of zeros of the function $F(x) = -3X$ are ……………

a) { Zero } b) { 3 } c) { − 3 } d) R − { 3 }

(2) The simplest form of the function $n(x) = \frac{3-x}{x-3}$, where $X \in R - \{3\}$ is ……………

a) 1 b) −1 c) 3 d) − 3

(3) If $n(x) = \frac{x-3}{x+2}$, then the domain of $n^{-1}(x) =$ ……………

a) {− 2 , 3 } b) R−{−2 , 3 } c) R−{−2 } d) R−{ 3 }

[B] The difference between the perimeter of two squares 12 cm. and the difference between the areas of two squares 33 cm^2. Find the length of side of each square?

[4]

[A] Find n (x) in the simplest form and showing its domain:

$$n(x) = \frac{x^2+3x+9}{x^3-27} - \frac{x^2-x-12}{9-x^2}$$

[B] By using a general formula:

Find in $\mathcal{R}$ the solution set of the equation $\frac{5}{x^2} - \frac{2}{x} = 1$, approximating the result to nearest three decimal places. Where $\sqrt{6} = 2.45$

[Q5]

[A] Find n (x) in the simplest form and showing its domain:

$$n(x) = \frac{x^2+x+1}{x^3-1} \div \frac{x^2-x}{x^2-2x+1}$$

[B] If A , B are two events of the sample space of a random experiment, and P (A) = 0.2, P (A – B) = 0.3 , P (B– A) = 0.4

Find: ① P (B)

② P (B ∪ A)

End of the questions

MODEL EXAM NO (5)

[Q1] A) Choose the correct answer:

(1) If intersection point of two lines $X-1=0$, $Y-2k=0$ lies in fourth quadrant then k may be .....

a) -5 b) 0 c) 1 d) 5

(2) The domain of the additive inverse of $n(x)=\frac{x}{x-3}$ is ....

a) R b) $R-\{0\}$ c) $R-\{3\}$ d) $R-\{0,3\}$

(3) If : $X^2=Y+Z$, $Y^2=Z+X$, $Z^2=X+Y$ then $\frac{1}{x+1}+\frac{1}{y+1}+\frac{1}{z+1}=$ .....

a) -1 b) 1 c) 2 d) 4

B): By using a general formula, find in R the solution set of the equation $X+\frac{4}{x}=6$, approximating the result to three decimal place.

[Q2] A) Choose the correct answer:

(1) If A is an event of the sample space of a random experiment, and $P(A)=4P(\acute{A})$ then $P(A)=$ ....

a) 0.8 b) 0.6 c) 0.4 d) 0.2

(2) The degree of the equation $XY=3$ is ....

a) First b) Second c) Third. d) zero

(3) If $x(3-\frac{2}{x})=\frac{3}{x}$,then $(x)^2+\frac{1}{(x)^2}=$ .... where $x\neq0$

a) $2\frac{1}{9}$ b) $2\frac{4}{9}$ c) $3\frac{1}{9}$ d) $3\frac{4}{9}$

[B] If the area of rectangle 77 cm², if its length decreased by 2 cm and its width increased by 2 cm, it will be a square. Find the area of square.

[Q3]

[A] Choose the correct answer:

(1) If n (x) = $\frac{x-2}{x+5}$, then the domain of n^{-1} (x) = ...

a) R b) R − {2} c) R − { −5 } d) R − { 2 , −5 }

(2) If A , B are two mutually exclusive events from the sample space of a random experiment, then P (A − B) = ...

a) P (B) b) P (A) c) 0 d) 1

(3) If F (x) = $\frac{7+x}{7-x}$, where X ∈ R − { ± 7 }, then F(−2) = ...

a) $\frac{-1}{f(-2)}$ b) $\frac{-1}{f(2)}$ c) $\frac{1}{f(2)}$ d) $\frac{1}{f(-2)}$

[B] n_1 , n_2 two algebraic fractions, $n_1(x) = \frac{x^2-4}{x^2+x-6}$,

$n_2(x) = \frac{x^3-x^2-6x}{x^3-9x}$, prove that n_1 (x)= n_2 (x)For all values of x in common domain and Find this domain ?

[Q4]

[A] Find n(x) in the simplest form showing its domain:

$$n(x) = \frac{x^2-2x}{x^4-3x^3+2x^2} \times \frac{4-x^2}{x^2+x-2}$$

Find the S.S when n (x) =0

[B] If A , B are two events of the sample space of a random experiment, and P (B) = $\frac{1}{3}$, P (A−B) = $\frac{1}{4}$, find P (A) if:

① P (A ∩ B) = $\frac{1}{12}$

② B ⊂ A

[Q5]

[A] Find n (x) in the simplest form showing its domain:

$$n(x) = \frac{x^2-2x-15}{x^2-9} \div \frac{x^2-25}{x^2-3x}$$

↳ Find the value of A if n (A) = $\frac{1}{3}$

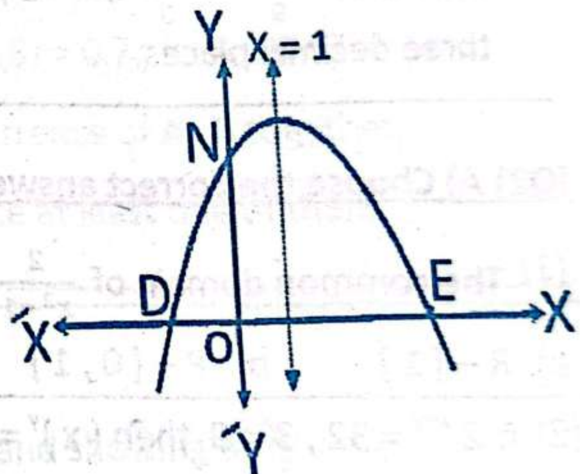
[B] In the opposite figure:

The quadratic curve of $\mathcal{F}$:

$\mathcal{F}(x) = aX^2 + bX + c$

The axis of symmetry is X = 1

N (0,12) , E (3,0) Find $\mathcal{F}(x)$



End of the questions

MODEL EXAM NO (6)

[Q1] A) Choose the correct answer:

(1) The two equations $X + 4Y = m$, $3X + KY = 21$ have infinite solution in $R \times R$ when $K + m =$ ....

a) 19 b) 20 c) 21 d) 22

(2) If : $X^2 - 4x - 1 = 0$, then $3x - \frac{3}{x} =$........

a) 2 b) 3 c) 4 d) 12

(3) If a coin tossing once, the probability of appearing head or tail equal..............

a) 100 % b) 50 % c) 25 % d) 0

[B] By using a general formula, find in R the solution set of the equation $\frac{x^2}{9} + \frac{4}{3}x = -2$, approximating the result to nearest three decimal places.

[Q2] A) Choose the correct answer:

(1) The common domain of $\frac{2}{x^2-1}$, $\frac{5x}{x^2-x}$ is ....

a) $R - \{1\}$ b) $R - \{0, 1\}$ c) $R - \{-1, 1\}$ d) $R - \{0, 1, -1\}$

(2) If $2^{x+y} = 32$, $3^x = 9$ then $(x)^y =$ .....

a) $\frac{1}{8}$ b) 8 c) $\frac{1}{9}$ d) 9

(3) If the domain of $n(x) = \frac{x+b}{x+a}$ is $R - \{-2\}$, $n(0) = 3$, then the value of $a + b =$ ....

a) 2 b) 6 c) 8 d) 10

[B] Find in $R \times R$ solution set of two equations:

$$X + Y = 2 , \frac{1}{x} + \frac{1}{y} = 2 \text{ where } X \neq 0 , Y \neq 0$$

[Q3]

[A] Choose the correct answer:

(1) If the curve of the quadratic function F passing through the points (2 , 0) , (− 3 , 0) , (0 , − 6), then the solution set of the function F (X) = 0 in R is ....

a) {−2 , 3}   b) {3 , 2}   c) {2 , −3}   d) {−3 , −6}

(2) The simplest form of the function $n(x) = \frac{3-x}{x-3}$, where $X \in R - \{3\}$ is ....

a) 1   b) −1   c) 3   d) − 3

(3) If A is an event from the sample space, then P (A`) = ...

a) 1   b) − 1   c) 1 − P(A)   d) P(A) − 1

[B] If A , B are two events of the sample space of a random experiment, and P (A) = 0.6 , P (B) = 0.7 , P (A∩B) = 0.4, Find:

① The probability of non–occurrence of A , B together.

② The probability of occurrence at least one of them.

[Q4]

[A] Find n(x) in the simplest form and showing its domain:

$$n(x) = \frac{x-6}{2x^2-15x+18} + \frac{x-5}{15-13x+2x^2}$$

[B] n_1 , n_2 two algebraic fractions, $n_1(x) = \frac{x^3+1}{x^3-x^2+x}$, $n_2(x) = \frac{x^3+x^2+x+1}{x^3+x}$

↬ Show that if $n_1 = n_2$ or not with giving the reason

[Q5]

[A] Find n(x) in the simplest form showing its domain:

$$n(x) = \frac{x^2-2x-15}{x^2-9} + \frac{2x-10}{x^2-6x+9}$$

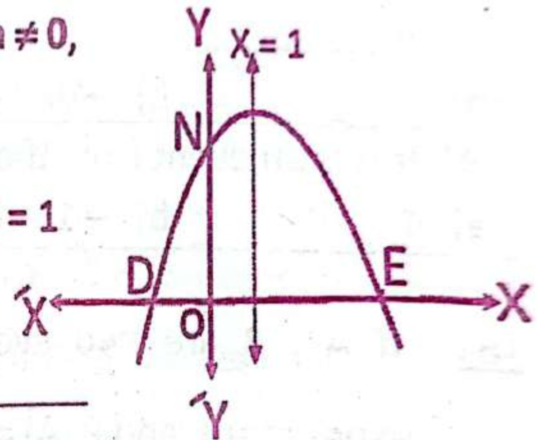
[B] The opposite figure represents the curve

Of function $\mathcal{F}$: $\mathcal{F}(x) = a x^2 + b X + c$, $a \neq 0$,

If OK = 30 unit length, 5 OD = 3 OE

And equation of line of symmetry is X = 1

Find the value of a , b , c



End of the questions

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9

